

STATE OF OHIO  
DEPARTMENT OF TRANSPORTATION

**ASD-302-0.00**

VILLAGE OF SAVANNAH

PERRY TOWNSHIP  
JACKSON TOWNSHIP  
ORANGE TOWNSHIP  
CLEAR CREEK TOWNSHIP  
ASHLAND COUNTY

PROJECT DESCRIPTION

THIS PROJECT WILL INCLUDE PAVEMENT REPAIR, RESURFACING WITH ASPHALT CONCRETE, GUARDRAIL WORK, PLACEMENT OF PAVEMENT MARKINGS, A SAFETY EDGE, AND STRUCTURE MAINTENANCE.

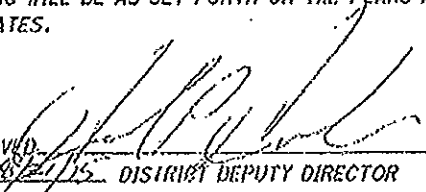
EARTH DISTURBED AREA

PROJECT EARTH DISTURBED AREA: N/A ACRES  
(MAINTENANCE PROJECT)  
ESTIMATED CONTRACTOR EARTH DISTURBED AREA: N/A ACRES  
(MAINTENANCE PROJECT)  
NOTICE OF INTENT EARTH DISTURBED AREA: N/A ACRES  
(MAINTENANCE PROJECT)

2013 SPECIFICATIONS

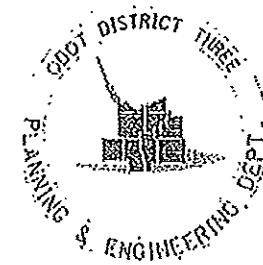
THE STANDARD SPECIFICATIONS OF THE STATE OF OHIO, DEPARTMENT OF TRANSPORTATION, INCLUDING CHANGES AND SUPPLEMENTAL SPECIFICATIONS LISTED IN THE PROPOSAL SHALL GOVERN THIS IMPROVEMENT.

I HEREBY APPROVE THESE PLANS AND DECLARE THAT THE MAKING OF THIS IMPROVEMENT WILL NOT REQUIRE THE CLOSING TO TRAFFIC OF THE HIGHWAY AND THAT PROVISIONS FOR THE MAINTENANCE AND SAFETY OF TRAFFIC WILL BE AS SET FORTH ON THE PLANS AND ESTIMATES.

APPROVED:   
DATE: 8/21/15 DISTRICT DEPUTY DIRECTOR

APPROVED:   
DATE: 8-31-15 DIRECTOR, DEPARTMENT OF TRANSPORTATION

PLANS PREPARED BY:

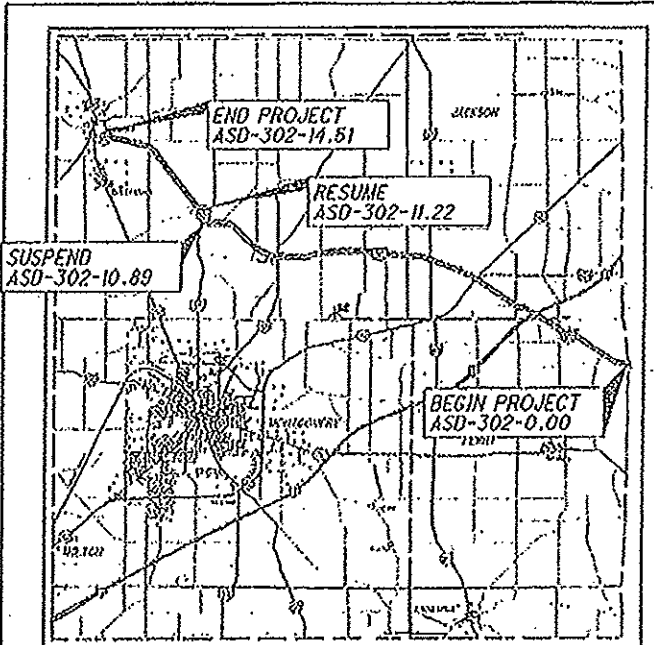


**UNDERGROUND UTILITIES**  
CONTACT BOTH SERVICES  
CALL TWO WORKING DAYS  
BEFORE YOU DIG

CALL  
1-800-362-2764  
(TOLL FREE)

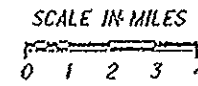
OHIO UTILITIES PROTECTION SERVICE  
NON-MEMBERS  
MUST BE CALLED DIRECTLY

OIL & GAS PRODUCERS PROTECTIVE  
SERVICE: CALL 1-800-925-0988



LOCATION MAP

LATITUDE: N 10° 55' 24" LONGITUDE: W 82° 15' 9"



PORTION TO BE IMPROVED:  
INTERSTATE & DIVIDED HIGHWAY: [Symbol]  
UNDIVIDED STATE & FEDERAL ROUTES: [Symbol]  
OTHER ROADS: [Symbol]

DESIGN DESIGNATION

SEE SHEET 2

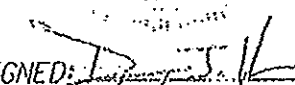
DESIGN EXCEPTIONS

NONE

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ENGINEERS SEAL:

SIGNED:   
DATE: 8/20/15

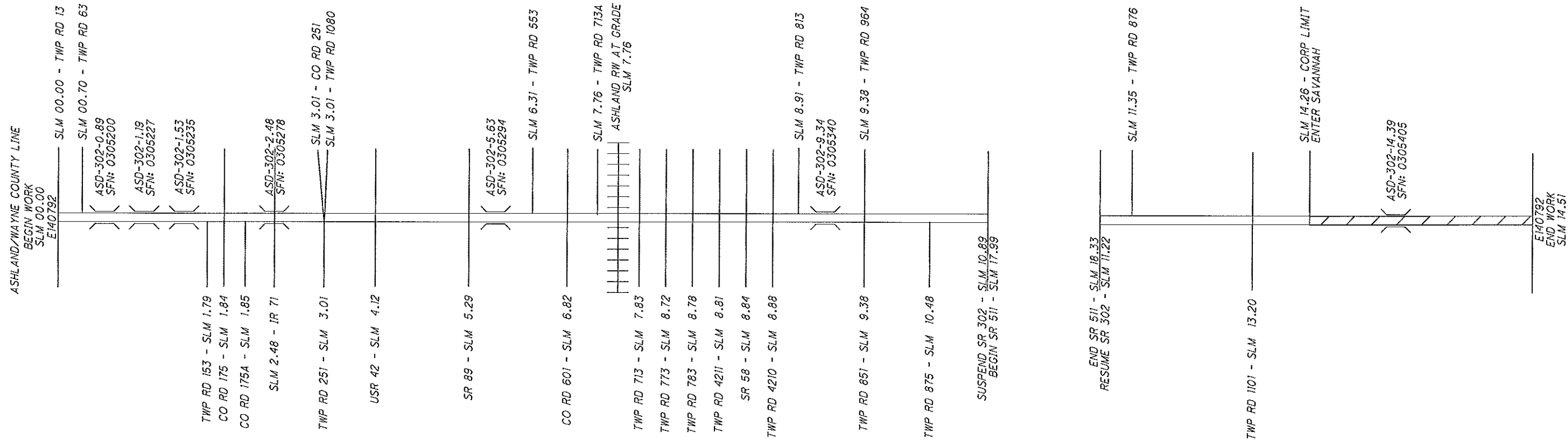
STANDARD CONSTRUCTION DRAWINGS								SUPPLEMENTAL SPECIFICATIONS	
BP-3.1	7/18/14	MT-95.31	7/18/14	TC-41.20	10/18/13	AS-1-54	12/1/54	800	7/17/15
BP-4.1	7/19/13	MT-96.11	7/17/15	TC-42.20	10/18/13	CSB-1-55	12/3/56	821	4/20/12
BP-7.1	7/18/14	MT-98.20	7/19/13	TC-52.10	10/18/13	DBR-2-73	7/19/02	830	1/17/18
BP-9.1	7/19/13	MT-96.26	7/19/13	TC-52.20	7/18/14	DBR-3-11	7/15/11	832	1/17/14
RM-1.1	7/18/14	MT-97.10	7/18/14	TC-61.30	7/18/14	GSD-1-96	7/19/02	846	4/17/15
						TBR-1-11	1/18/13		
DM-4.3	7/19/13	MT-97.12	7/18/14	TC-65.10	1/17/14				
DM-4.4	7/20/12	MT-97.20	1/18/15	TC-65.11	7/18/14				
		MT-99.20	7/19/13	TC-71.10	1/17/14				
		MT-107.90	7/17/15						
		MT-109.10	7/19/13						

SPECIAL PROVISIONS

DESIGN FILE: SSSS.DGNFILESPECIFICATIC WORKSTATION: SSSS DATE: SSSS

ASD - SR 302-00.00  
150578 PID - 94390  
Dist 3 11/19/2015  
Contract Proposal Available @ www.contracts.dot.state.oh.us/home  
Conformed Set

FEDERAL PROJECT NO. E140792  
PID NO. 94390  
CONSTRUCTION PROJECT NO.  
RAILROAD INVOLVEMENT ASHLAND RAILWAY  
ASD-302-0.00



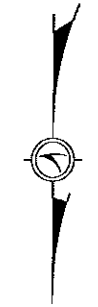
**S.R. 302**

- CORPORATION LIMIT

**S.R. 302**

DESIGN DESIGNATION	ASD- 302-0.00-4.12	ASD- 302-4.12-5.29	ASD- 302-5.29-6.82	ASD- 302-6.82-8.84	ASD- 302-8.84-10.89	ASD- 302-11.22-14.51
CURRENT YEAR ADT (2016)	1300	1200	950	1200	650	610
DESIGN YEAR ADT (2028)	1400	1300	960	1200	730	680
DESIGN HOURLY VOLUME (2028)	130	130	120	140	70	60
DIRECTIONAL DISTRIBUTION	0.7	0.64	0.57	0.57	0.56	0.54
TRUCKS (24 HOUR B&C)	0.06	0.04	0.05	0.05	0.04	0.05
Td	0.04	0.02	0.02	0.02	0.03	0.03
NHS PROJECT	NO	NO	NO	NO	NO	NO
DESIGN FUNCTIONAL CLASSIFICATION	RURAL MAJOR COLLECTOR	RURAL MAJOR COLLECTOR	RURAL MAJOR COLLECTOR	RURAL MAJOR COLLECTOR	RURAL MAJOR COLLECTOR	RURAL MAJOR COLLECTOR

SPEED LIMITS		
ROUTE	SLM	MPH
ASD 302	0.00-8.61	55
ASD 302	8.61-9.00	55
ASD 302	9.00-14.26	55
ASD 302	14.26-14.51	50



# GENERAL

## UTILITIES

LISTED BELOW ARE ALL UTILITIES LOCATED WITHIN THE PROJECT CONSTRUCTION LIMITS TOGETHER WITH THEIR RESPECTIVE OWNERS.

THE LOCATION OF THE UNDERGROUND UTILITIES SHOWN ON THE PLANS ARE AS OBTAINED FROM THE OWNERS AS REQUIRED BY SECTION 153.64 O.R.C.

**ELECTRIC**  
AMERICAN ELECTRIC POWER  
RAY ZITNEY  
301 CLEVELAND AVENUE SW  
CANTON, OHIO 44701  
330-438-7718

**TELEPHONE**  
AT&T OF OHIO (FORMERLY SBC)  
ROB FEY  
130 N. ERIE STREET, ROOM 714  
TOLEDO, OHIO 43604  
419-245-5004

**ELECTRIC**  
OHIO EDISON COMPANY  
DAN DEVILLE, AREA MANAGER  
1717 ASHLAND ROAD  
MANSFIELD, OHIO 44905  
419-521-6219

**TELEPHONE**  
FRONTIER COMMUNICATIONS  
JIM SAUBER  
1534 S.R. 511 SOUTH  
ASHLAND, OHIO 44805  
419-282-6551

**ELECTRIC**  
FIRELANDS ELECTRIC CO-OP  
DENNY MARUGG  
ONE ENERGY PLACE  
NEW LONDON, OHIO 44851  
419-929-1571

**CABLE**  
ARMSTRONG UTILITIES  
TAD SEDWICK  
1215 CLAREMONT AVENUE  
ASHLAND, OHIO 44805  
419-289-0161 X. 50603

**ELECTRIC**  
HOLMES-WAYNE ELECTRIC CO-OP  
DALE PATTERSON  
6060 ST. RT. 83, P.O. BOX 112  
MILLERSBURG, OHIO 44654  
330-674-1055

**CABLE**  
TIME WARNER CABLE  
DAVID BAKER  
1575 LEXINGTON AVENUE  
MANSFIELD, OHIO 44901  
419-756-6091 EXT. 419-555-5109

**GAS**  
COLUMBIA GAS OF OHIO  
KURT SAUM, FIELD ENGINEER  
1800 BROAD AVENUE  
FINDLAY, OHIO 45840  
419-427-3216

**CITY**  
CITY OF ASHLAND  
206 CLAREMONT AVENUE  
ASHLAND, OHIO 44805  
MAYOR BILL STRINE  
419-289-8622

**GAS**  
COLUMBIA GAS TRANSMISSION  
BRAD HENRY  
301 MAPLE STREET, P.O. BOX 330  
SUGAR GROVE, OHIO 43155  
740-746-2266

**WATER**  
RURAL LORAIN COUNTY WATER AUTHORITY  
JIM TRUESDELL  
42401 S.R. 303, P.O. BOX 567  
LAGRANGE, OHIO 44050  
440-355-6060

**GAS**  
GATHERCO INC.  
JOHN GRAY  
300 TRACY BRIDGE RD  
ORRVILLE OH, 44667  
330-498-9553

THE AFOREMENTIONED UTILITY COMPANIES AND AGENCIES HAVE VARIOUS FACILITIES IN THE AREA THAT WILL REMAIN IN PLACE DURING CONSTRUCTION.

EXTREME CAUTION SHOULD BE EXERCISED IN AREAS WITH UTILITIES. SECTIONS 105.07 AND 107.16 OF THE DEPARTMENT OF TRANSPORTATION CONSTRUCTION AND MATERIALS SPECIFICATIONS REQUIRE, AMONG OTHER THINGS, THAT THE CONTRACTOR COOPERATE WITH ALL UTILITIES LOCATED WITHIN THE LIMITS OF THIS CONSTRUCTION PROJECT AND TAKE RESPONSIBILITY FOR THE PROTECTION OF THE UTILITY PROPERTY AND SERVICES.

## ROUTINE MAINTENANCE

BETWEEN THE TIME THAT BIDS ARE TAKEN AND THE START OF CONSTRUCTION, THE MAINTAINING AGENCY MAY ENTER UPON THE PROJECT AND PERFORM ROUTINE MAINTENANCE SUCH AS CRACK SEALING, PATCHING, AND BERM AND SHOULDER REPAIR. THE EFFECTS, IF ANY, OF THE PERFORMANCE OF ROUTINE MAINTENANCE SHALL BE CONSIDERED AS INHERENT IN WORK OF THE CHARACTER PROVIDED FOR IN THE PLAN AND THE RESULTING CONDITIONS SHALL NOT BE CONSIDERED AS DIFFERING MATERIALLY FROM THOSE EXISTING AT THE TIME BIDS WERE TAKEN.

## WORK LIMITS

THE WORK LIMITS SHOWN ON THESE PLANS ARE FOR PHYSICAL CONSTRUCTION ONLY. PROVIDE THE INSTALLATION AND OPERATION OF ALL WORK ZONE TRAFFIC CONTROL AND WORK ZONE TRAFFIC CONTROL DEVICES REQUIRED BY THESE PLANS WHETHER INSIDE OR OUTSIDE THESE WORK LIMITS.

## PROGRESSION OF WORK

WIDENING SHALL BE DONE PRIOR TO RESURFACING. GUARDRAIL SHALL BE REMOVED PRIOR TO ANY EMBANKMENT WORK AT THE GUARDRAIL RUN. GUARDRAIL WORK SHALL BE DONE AFTER WIDENING, RESURFACING, AND BERM WORK SO AS TO ESTABLISH PROPER GRADES FROM WHICH TO CONSTRUCT THE RAIL.

## CONSTRUCTION NOTIFICATION

THE CONTRACTOR SHALL ADVISE THE PROJECT ENGINEER A MINIMUM OF FOURTEEN (14) DAYS PRIOR TO THE FOLLOWING: THE START OF CONSTRUCTION ACTIVITIES, LANE RESTRICTIONS, LANE CLOSURES, AND OR ROAD CLOSURES. THE PROJECT ENGINEER WILL FORWARD THIS INFORMATION TO THE FOLLOWING:

DISTRICT PUBLIC INFORMATION OFFICER (PIO) BY FAX AT (614) 887-4305 OR EMAIL AT D03.PIO@DOT.STATE.OH.US

DISTRICT PERMIT SECTION BY FAX AT (614) 887-4318 OR EMAIL AT LOUIS.TUMBLIN@DOT.STATE.OH.US

CENTRAL OFFICE SPECIAL HAUL PERMITS SECTION BY FAX AT (614) 728-4099 OR EMAIL AT HAULING.PERMITS@DOT.STATE.OH.US

THE PIO WILL, IN TURN, NOTIFY THE PUBLIC, THE LOCAL EMERGENCY SERVICES, AFFECTED SCHOOLS AND BUSINESSES, AND ANY OTHER IMPACTED LOCAL PUBLIC AGENCY OF ANY OF THE ABOVE MENTIONED ITEMS, VIA MEDIA SOURCES.

## ROADWAY

### PAVING AT RAILROAD CROSSINGS

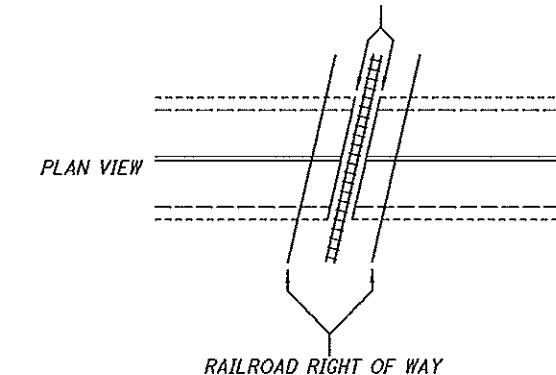
PRIOR TO ANY WORK AT RAILROAD CROSSINGS THE CONTRACTOR SHALL CONTACT THE AFFECTED RAILROAD AUTHORITY SO AS TO MAKE THEM AWARE OF THE PROGRESS AND SCHEDULE OF WORK. THE CONTRACTOR SHALL COOPERATE WITH THE RAILROAD SO AS TO ELIMINATE ANY SAFETY CONCERNS. FLAGGING WILL BE REQUIRED BY THE RAILROAD. ODOT WILL BE RESPONSIBLE FOR PAYING THE RAILROAD FOR ALL FLAGGING COSTS. REFER TO THE RAILROAD SPECIAL CLAUSES IN THE PROPOSAL.

THE CROWN SHALL BE WORKED OUT OF THE RESURFACED PAVEMENT ON EACH SIDE OF THE RAILROAD CROSSING, BEGINNING 50 FEET FROM THE NEAREST RAIL, BY RAISING THE EDGES OF THE RESURFACED PAVEMENT TO MEET THE PLATFORM ELEVATION.

SUSPEND AND RESUME RESURFACING AT THE EDGE OF THE EXISTING CROSSING SURFACE ON BOTH SIDES OF THE TRACK.

### DETAIL - PAVING AT RAILROAD CROSSING

BUTT JOINT/BEGIN AND END RESURFACING



NOTE:  
1.) DO NOT DISTURB RAILROAD GATES

2.) RE-INSTALL PAVEMENT MARKINGS

3.) RAILROAD MAY DIRECT ENGINEER ON THE LOCATION OF BUTT JOINTS. OTHERWISE OMIT AND RESUME RESURFACING AT AT THE EDGE OF THE EXISTING CROSSING SURFACE ON BOTH SIDES OF THE TRACK.

## ITEM 209 - PREPARING SUBGRADE FOR SHOULDER PAVING, AS PER PLAN

PREPARE THE SHOULDER FOR PAVING A CONSISTENT SAFETY EDGE IN BOTH THICKNESS AND WIDTH.

PRIOR TO PAVING THE SAFETY EDGE, GRADE AN AREA 10 INCHES WIDE, BEGINNING AT THE EDGE OF THE PAVED ROADWAY, TO PROVIDE A LEVEL SURFACE FREE OF VEGETATION FOR CONSTRUCTION OF THE SAFETY EDGE. IF NECESSARY, EXCAVATE THE GRADED AREA TO THE DEPTH NECESSARY TO CONSTRUCT THE SAFETY EDGE. COMPACT THE GRADED SHOULDER ACCORDING TO 617.05 OR AS DIRECTED BY THE ENGINEER. THE GRADED SHOULDER BEYOND THE 10 INCH WIDE AREA FOR THE SAFETY EDGE SHALL BE GRADED AT A 10:1 SLOPE.

## SAFETY EDGE

IN ADDITION TO THE REQUIREMENTS OF 401.12, ATTACH A DEVICE TO THE SCREEDE OF THE PAVER THAT CONFINES THE MATERIAL AT THE END GATE AND EXTRUDES THE ASPHALT MATERIAL IN SUCH A WAY THAT RESULTS IN A COMPACTED WEDGE SHAPE PAVEMENT EDGE OF APPROXIMATELY 30 DEGREES (NOT STEEPER THAN 40 DEGREES). ENSURE THE DEVICE MAINTAINS CONTACT WITH THE EXISTING SURFACE, AND ALLOW FOR AUTOMATIC TRANSITION TO CROSS ROADS, DRIVEWAYS AND OBSTRUCTIONS. DO NOT USE CONVENTIONAL SINGLE PLATE STRIKE OFF.

CONSTRUCTION OF SAFETY EDGE CAN BE OMITTED AT LOCATIONS WHERE EXISTING WIDTH OF GRADED SHOULDER OR BERM IS LESS THAN 12". PROJECTS WITH VARYING CONDITIONS SHOULD USE SAFETY EDGE WHERE POSSIBLE. PLAN PREPARATION HAS MADE EVERY REASONABLE ATTEMPT TO IDENTIFY POSSIBLE SAFETY EDGE LOCATIONS.

USE THE TRANSTECH SHOULDER WEDGE MAKER, THE CARLSON SAFETY EDGE END GATE, THE ADVANT-EDGER, THE TROXLER SAFETSLOPE OR A SIMILAR APPROVED-EQUAL DEVICE THAT PRODUCES THE SAME WEDGE CONSOLIDATION RESULTS. CONTACT INFORMATION FOR THESE WEDGE SHAPE COMPACTION DEVICES IS THE FOLLOWING:

TRANSTECH SYSTEMS, INC.  
1594 STATE STREET  
SCHENECTADY, NY 12304  
1-800-724-6306  
www.transtechsys.com

ADVANT-EDGE PAVING EQUIPMENT LLC  
P.O. BOX 9163  
NISKAYUNA, NY 12309-0163  
518-280-6090  
www.advantedgepaving.com

CARLSON SAFETY EDGE END GATE  
18450 50TH AVENUE EAST  
TACOMA, WA 98446  
253-875-8000

TROXLER ELECTRONICS LABORATORIES INC.  
3008 E. CORNWALLIS RD.  
RESEARCH TRIANGLE PARK, NC 27709  
1-877-TROXLER  
www.troxlerlabs.com

IF ELECTING TO USE A SIMILAR DEVICE, PROVIDE PROOF THAT THE DEVICE HAS BEEN USED ON PREVIOUS PROJECTS WITH ACCEPTABLE RESULTS OR CONSTRUCT A TEST SECTION PRIOR TO THE BEGINNING OF WORK AND DEMONSTRATE WEDGE COMPACTION TO THE SATISFACTION OF THE ENGINEER. SHORT SECTIONS OF HANDWORK WILL BE ALLOWED WHEN NECESSARY FOR TRANSITIONS AND TURNOUTS OR OTHERWISE AUTHORIZED BY THE ENGINEER.

IN ADDITION TO THE REQUIREMENTS OF 401.16, MAKE THE FIRST ROLLER PASS 8 TO 12 INCHES AWAY FROM TAPERED EDGE. DO NOT ROLL THE TAPER.

## ITEM 623 - MONUMENT BOX ADJUSTED TO GRADE

ALL WORK RELATED TO ADJUSTING MONUMENT BOXES TO GRADE WILL BE IN ACCORDANCE TO SECTIONS 623.04 AND 623.05 OF THE 2013 ODOT CONSTRUCTION AND MATERIALS SPECIFICATIONS.

THE MONUMENT BOX TO BE ADJUSTED MAY OR MAY NOT HAVE AN EXISTING ADJUSTABLE FRAME. THE WORK SHALL CONSIST OF ADJUSTING THE EXISTING MONUMENT BOX TO THE SATISFACTION OF THE ENGINEER. THE CONTRACTOR IS REMINDED TO FIELD CHECK ALL ADJUSTMENT TO GRADE ITEMS PRIOR TO BIDDING, AS NO ADDITIONAL COMPENSATION WILL BE GRANTED FOR LABOR AND MATERIALS REQUIRED TO SATISFACTORILY ADJUST CASTINGS WITHOUT ADJUSTABLE FRAMES.

APPROXIMATE LOCATION OF KNOWN MONUMENT BOXES:  
(01/STR/PV):

SLM 2.32 (BURIED)  
SLM 2.62 (BURIED)

SLM 5.60  
SLM 5.65

## EXISTING PLANS

EXISTING PLANS MAY BE INSPECTED IN THE ODOT DISTRICT 3 OFFICE IN ASHLAND.

MODEL NAME: \$MODELNAME\$

DESIGN FILE: \$\$\$\$DGNFILESPECIFICATIONS\$\$\$\$  
WORKSTATION: \$\$\$\$TERMINAL\$\$\$ DATE: \$\$\$\$DATE\$\$\$\$

CALCULATED  
MAE  
CHECKED  
CAD

GENERAL NOTES

ASD-302-0.00

**DRAINAGE**

**ITEM 611 - CASTINGS ADJUSTED TO GRADE**

THE CASTING TO BE ADJUSTED MAY OR MAY NOT HAVE AN EXISTING FRAME. THE WORK SHALL CONSIST OF ADJUSTING THE EXISTING CASTING TO THE SATISFACTION OF THE ENGINEER. IT IS NOT INTENDED TO PLACE NEW FRAMES WHERE NONE CURRENTLY EXIST. THE CONTRACTOR IS REMINDED TO FIELD CHECK ALL ADJUSTMENT TO GRADE ITEMS PRIOR TO BIDDING, AS NO ADDITIONAL COMPENSATION WILL BE GRANTED FOR LABOR AND MATERIALS REQUIRED TO SATISFACTORILY ADJUST CASTINGS WITHOUT FRAMES.

CATCH BASIN ADJUSTED TO GRADE: 1 EACH (01/STR/PW)

**APPROXIMATE LOCATIONS OF KNOWN CASTINGS**

ASD-302-0.00-10.89 / 11.22-14.51

CATCH BASIN: SLM 8.83

**PAVEMENT**

**PAVEMENT CORING INFORMATION**

COUNTY	ROUTE	SLM	ASPHALT	CONCRETE	LOCATION	DIRECTION	YEAR
ASD	302	0.00	9.0	0.0	Inside	SB	2005
ASD	302	1.00	12.0	3.0	Inside	SB	2005
ASD	302	2.00	12.5	0.0	Outside	SB	2005
ASD	302	3.00	13.0	0.0	Inside	SB	2005
ASD	302	4.00	8.0	0.0	Outside	SB	2005
ASD	302	4.70	11.3	0.0	Inside	SB	2005
ASD	302	5.30	14.0	0.0	Outside	SB	2005
ASD	302	6.00	14.0	0.0	Inside	SB	2005
ASD	302	7.00	15.5	0.0	Outside	SB	2005
ASD	302	8.00	11.5	0.0	Inside	SB	2005
ASD	302	8.50	8.5	0.0	Outside	SB	2005
ASD	302	12.50	10.0	0.0	Inside	NB	2006

**INTERSECTIONS AND DRIVES**

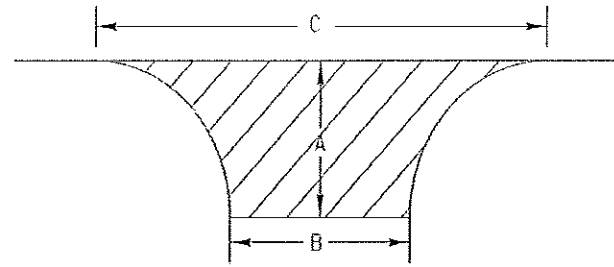
RURAL-INTERSECTIONS SHALL BE PLANED AND PAVED TO THE END OF THE RADII OR AS DIRECTED BY THE ENGINEER. (TO PROVIDE A SMOOTH TRANSITION BETWEEN THE TWO HIGHWAYS, AND TO ELIMINATE WATER POCKETS).

URBAN-INTERSECTIONS SHALL BE PLANED AND PAVED TO THE BACK OF CROSSWALKS OR AS DIRECTED BY THE ENGINEER. (TO PROVIDE A SMOOTH TRANSITION BETWEEN THE TWO HIGHWAYS, AND TO ELIMINATE WATER POCKETS).

EXISTING PAVED DRIVES SHALL BE PAVED SO AS TO PROVIDE A SMOOTH TRANSITION BETWEEN THE HIGHWAY AND THE DRIVE, (DISTANCE FROM EDGE OF ROADWAY MAY VARY AT EACH DRIVE) AS DIRECTED BY THE ENGINEER.

EXISTING AGGREGATE DRIVES SHALL BE PAVED WITH AN APRON AN AVERAGE WIDTH OF 4 FT. THE SLOPE OF THIS APRON SHALL BE THE SAME AS THE ADJACENT PAVEMENT SLOPE OR AS DIRECTED BY THE ENGINEER. ANY GRADING NEEDED TO PAVE THE APRON SHALL BE INCLUDED IN THE RELATED ASPHALT ITEM FOR PAYMENT. ITEM 617 COMPACTED AGGREGATE SHALL BE PLACED ADJACENT TO THIS APRON TO PROVIDE A SMOOTH TRANSITION FROM THE APRON TO THE EXISTING DRIVE, (WIDTH OF THIS 617 APPLICATION MAY VARY) AS DIRECTED BY THE ENGINEER. AN ADDITIONAL QUANTITY OF ITEM 617 HAS BEEN ESTIMATED TO COMPLETE THIS WORK AND IS SHOWN AS AN EXTRA AREA ON THE PAVEMENT & SHOULDER DATA SHEET.

ANY HAZARD OR UNSAFE CONDITION RESULTING FROM THE ABOVE WORK MUST BE CORRECTED IMMEDIATELY. THE CONTRACTOR IS REMINDED OF SECTIONS 105.01, 107.07 & 614.02A OF THE CONSTRUCTION AND MATERIALS SPECIFICATIONS.



Intersection Name	A (ft.)	B (ft.)	C (ft.)	Area (sy)
TWP RD 13 (LT)	35	24	75	159
TWP RD 63 (LT)	26	26	46	94
TWP RD 153 (RT)	18	14	34	41
CO RD 175 (LT)	50	23	88	248
CO RD 175 (RT)	22	24	42	73
CO RD 175A (RT)	42	30	32	143
CO RD 251 (LT)	34	23	60	133
TWP RD 251 (RT)	20	20	48	65
TWP RD 1080 (LT)	43	18	54	143
USR 42 (LT)	17	28	53	69
SUSPEND & RESUME AT EXISTING JOINT				
USR 42 (RT)	14	30	62	63
SR 89 (LT)	21	24	47	74
SUSPEND & RESUME AT EXISTING JOINT				
SR 89 (RT)	27	27	74	128
TWP RD 553 (LT)	31	21	61	118
CO RD 601 (LT)	24	25	71	108
CO RD 601 (RT)	23	25	59	93
TWP RD 713A (LT)	43	20	77	186
TWP RD 713 (LT)	27	21	63	105
TWP RD 713 (RT)	20	21	45	64
TWP RD 773 (LT)	17	14	31	37
TWP RD 773 (RT)	15	12	31	31
TWP RD 783 (LT)	15	20	36	42
TWP RD 783 (RT)	17	20	45	54
TWP RD 4211 (LT)	10	13	25	19
TWP RD 4211 (RT)	10	14	24	19
SR 58 (LT)	20	35	65	100
SUSPEND & RESUME AT EXISTING JOINT				
SR 58 (RT)	18	36	64	91
TWP RD 4210 (LT)	11	12	25	20
TWP RD 4210 (RT)	10	13	24	19
TWP RD 813 (LT)	16	18	42	46
TWP RD 851 (RT)	30	29	74	147
TWP RD 984 (LT)	34	26	78	164
TWP RD 875 (RT)	34	21	73	145
TWP RD 876 (LT)	55	17	91	255
TWP RD 1101 (LT)	25	24	54	94
TWP RD 1101 (RT)	25	26	59	103
<b>Total Intersection Areas</b>				<b>3493</b>

**ITEM 251 - PARTIAL DEPTH PAVEMENT REPAIR  
ITEM 253 - PAVEMENT REPAIR**

THESE ITEMS OF WORK SHALL CONSIST OF THE REMOVAL OF THE EXISTING PAVEMENT OR PAVED BERM WHICH MAY BE ASPHALT, BRICK, CONCRETE, OR A COMBINATION OF EACH, IN AREAS OF EXISTING PAVEMENT FAILURE. CORING HAS BEEN PERFORMED TO HELP DETERMINE THE COMPONENTS THAT MAY BE ENCOUNTERED DURING THIS ITEM OF WORK. THE PAVEMENT CORING INFORMATION IS SHOWN ON THIS PLAN SHEET.

PAVEMENT REPAIR SHALL BE PERFORMED AFTER PAVEMENT PLANING AND BEFORE PLACEMENT OF THE INTERMEDIATE AND/OR SURFACE COURSE. THE DEPTH OF REMOVAL SHALL BE SUFFICIENT TO REMOVE ALL DETERIORATED PAVEMENT WITH A MAXIMUM DEPTH OF 12", BASED ON THE PAVEMENT DESIGN AND AN AVERAGE DEPTH OF 4" AND AN AVERAGE WIDTH OF 4 FT FOR ESTIMATING PURPOSES.

REPLACEMENT MATERIAL SHALL BE ITEM 301, ITEM 441 TYPE 2, OR ITEM 442 19MM MATERIAL AND SHALL BE PLACED AND COMPACTED TO FINISH FLUSH WITH THE ADJACENT PAVEMENT SURFACE. ITEM 301 ASPHALT CONCRETE, PG64-22 CAN BE USED WHEN THE DEPTH OF THE REPAIR IS BETWEEN 3" AND 12" WITH A MAXIMUM PAVEMENT LIFT OF 6". ITEM 441 TYPE 2 OR ITEM 442 19MM CAN BE USED WHEN THE DEPTH OF THE REPAIR IS BETWEEN 1.5" AND 5" WITH A MAXIMUM PAVEMENT LIFT OF 3". THE CONTRACTOR HAS THE OPTION OF USING EITHER ITEM 301, ITEM 441 TYPE 2, OR ITEM 442 19MM MATERIAL WHEN THE PAVEMENT REPAIR IS BETWEEN 3" AND 5" DEEP. PG64-22 ASPHALT BINDER SHALL BE USED FOR ALL OF THE ASPHALT CONCRETE MATERIALS FOR THESE REPAIRS.

PAYMENT SHALL INCLUDE ALL LABOR, EQUIPMENT, AND MATERIALS NECESSARY TO COMPLETE THE PAVEMENT REPAIR. FOR PAYMENT PURPOSES ITEM 251 PARTIAL DEPTH PAVEMENT REPAIR IS TO BE A MAXIMUM OF 4" DEEP AND ITEM 253 PAVEMENT REPAIR IS FOR DEPTHS GREATER THAN 4". PAYMENT WILL BE MADE AT THE UNIT BID PRICE PER CUBIC YARD, (BY TICKET WEIGHT CONVERSION), OF ITEM 251 - PARTIAL DEPTH PAVEMENT REPAIR OR ITEM 253 - PAVEMENT REPAIR. THE FOLLOWING ESTIMATED QUANTITIES ARE PROVIDED IN THE GENERAL SUMMARY TO BE USED AS DIRECTED BY THE ENGINEER:

SR 302 ITEM 251 - PARTIAL DEPTH PAVEMENT REPAIR (01/STR/PV) 1750 CY

0.00-1.00	170 CY
1.00-2.00	131 CY
2.00-3.00	68 CY
3.00-4.00	78 CY
4.00-5.00	98 CY
5.00-6.00	125 CY
6.00-7.00	173 CY
7.00-8.00	85 CY
8.00-9.00	96 CY
9.00-10.00	115 CY
10.00-10.89	88 CY
11.22-12.00	139 CY
12.00-13.00	144 CY
13.00-14.00	164 CY
14.00-14.51	76 CY

**PROFILE AND ALIGNMENT**

PLACE THE PROPOSED ASPHALT CONCRETE OVERLAY TO FOLLOW THE ALIGNMENT AND PROFILE OF THE EXISTING PAVEMENT. (PREVIOUS CONSTRUCTION PLANS SHOWING THE ORIGINAL ALIGNMENT AND PROFILE, ARE AVAILABLE FOR INSPECTION AT THE ODOT DISTRICT 3 OFFICE). PLACE THE PROPOSED ASPHALT CONCRETE OVERLAY AS SHOWN ON THE TYPICAL SECTIONS.

**PART-WIDTH CONSTRUCTION**

BECAUSE OF THE NECESSITY TO BUILD THIS PROJECT UNDER TRAFFIC AND TO CONSTRUCT THE FULL PAVEMENT WIDTH IN STAGES, EXTREME CARE SHALL BE TAKEN TO PREVENT THE CONSTRUCTION OF A BUTT JOINT IN THE BASE COURSES. LONGITUDINAL JOINTS SHALL BE LAPPED AS SHOWN ON STANDARD CONSTRUCTION DRAWING BP-3.1.

DESIGN FILE:\$\$\$\$\$.DGN FILE SPECIFICATIONS\$\$\$\$\$  
 WORKSTATION\$TERMINAL\$ DATE:\$\$\$\$\$DATE\$\$\$\$\$  
 MODEL NAME: \$MODELNAME\$

CALCULATED  
 MAE  
 CHECKED  
 CAD

GENERAL NOTES

ASD-302-0.00

**PAVEMENT (CONTINUED)**

**ITEM 254 - PAVEMENT PLANING, ASPHALT CONCRETE**

THE INTENT OF THE PLANING IS TO MILL 1.5 INCHES AT THE CENTER OF PAVEMENT AT NON-CURBED AREAS. THE PAVEMENT SLOPE SHALL BE 0.010 MINIMUM AND 0.016 PREFERRED, CONTINUOUS BETWEEN THE CROWN AND THE PROPOSED EDGELINE/SHOULDER. THE MILLING DEPTH SHALL BE CONTROLLED FROM THE CENTER OF PAVEMENT IN CONFORMANCE WITH THE ABOVE GUIDELINES.

SPECIAL ATTENTION SHALL BE GIVEN TO SUPERELEVATED CURVES. THE SUPERELEVATION SHALL BE MAINTAINED AND/OR RESTORED, IF NECESSARY, AS DIRECTED BY THE ENGINEER. IF THERE IS NO INFORMATION IN THE PLANS TO CHANGE THE SUPERELEVATION, THE INTENT IS TO MAINTAIN THE EXISTING SUPERELEVATION.

THE CONTRACTOR SHALL MAINTAIN POSITIVE DRAINAGE TO ALL CATCH BASINS AND INLETS.

THE PROGRESSION OF THE PLANING SHALL PROCEED IN SUCH A MANNER THAT NORMAL TRAFFIC WILL NOT BE REQUIRED TO RUN OVER THE PLANED ROADWAY SURFACE MORE THAN FOURTEEN (14) CALENDAR DAYS. FOR EACH CALENDAR DAY BEYOND THE 14 DAYS THAT THE ROADWAY REMAINS EXPOSED TO THE PLANED SURFACE, THE CONTRACTOR WILL BE ASSESSED A DISINCENTIVE FEE OF \$1000 PER DAY.

PAYMENT SHALL INCLUDE ALL LABOR, EQUIPMENT, AND MATERIALS NECESSARY TO COMPLETE THE PAVEMENT PLANING, ASPHALT CONCRETE. PAYMENT WILL BE MADE AT THE UNIT BID PRICE PER SQUARE YARD OF ITEM 254 - PAVEMENT PLANING, ASPHALT CONCRETE.

**ITEM 442 - ASPHALT CONCRETE SURFACE COURSE, 9.5 MM, TYPE A (446), AS PER PLAN**

ALL OPEN TRANSVERSE JOINTS SHALL BE TAPERED TO MEET EXISTING PAVEMENT BEFORE INTRODUCING TRAFFIC. A "BUMP" SIGN (W8-1-36) SHALL BE ERCTED ON EACH SIDE OF TRANSVERSE JOINTS LEFT OPEN OVER NIGHT, INCLUDING A SPEED ADVISORY SIGN. THESE SIGNS SHALL BE REMOVED IMMEDIATELY AFTER JOINT HAS BEEN CLOSED. PLACEMENT OF SIGNS SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 614 MAINTAINING TRAFFIC.

CARE SHALL BE TAKEN TO MATCH EXISTING PAVEMENT ELEVATIONS AT EXISTING PAVED BERMS, DRIVES, INTERSECTIONS, ETC.

REQUIREMENTS OF 442 APPLY EXCEPT AS FOLLOWS:  
MIX DESIGN: FOR N<sub>60s</sub> USE 50 GYRATIONS, FOR N<sub>max</sub> USE 75 GYRATIONS. MINIMUM TOTAL PG BINDER CONTENT IS 6.0 PERCENT.  
USE A PG 64-22 BINDER.  
MAXIMUM RECLAIMED ASPHALT CONCRETE PAVEMENT IS 20 PERCENT. WHEN AN AGGREGATE SOURCE IS SPECIALLY DESIGNATED WITH AN SR ON THE AGGREGATE GRAVITY LIST DO NOT USE THE AGGREGATE EXCEPT AS ALLOWED FOR MEDIUM TRAFFIC IN THE GUIDELINES FOR MAINTAINING ADEQUATE PAVEMENT FRICTION IN SURFACE PAVEMENT.  
QUALITY CONTROL: DO NOT PERFORM N<sub>max</sub> IN QUALITY CONTROL TESTING. DO NOT TAKE EXTRA ASPHALT BINDER SAMPLES AS OUTLINED IN CMS 442.05.

**ITEM 442 - ASPHALT CONCRETE SURFACE COURSE, 9.5MM, TYPE A (446), AS PER PLAN (SAFETY EDGE)**

THE SAFETY EDGE SHALL BE INSTALLED AT THE SAME TIME AS THE SURFACE COURSE IS TO BE PLACED. THE SAFETY EDGE WILL NOT REQUIRE ANY DENSITY TESTING.

**ITEM 254 - PATCHING PLANED SURFACE**

AN ESTIMATED QUANTITY OF ITEM 254 - PATCHING PLANED SURFACE HAS BEEN SET UP TO BE USED AS DIRECTED BY THE ENGINEER AS DESCRIBED IN CMS 254.04. THE LIMIT OF THE PATCHING DEPTH IS 0 TO 2 IN.

**BUTT JOINTS**

BUTT JOINTS SHALL NOT BE CUT AND LEFT OPEN TO TRAFFIC. THEY SHALL BE FILLED IN WITH A TEMPORARY ASPHALT CONCRETE WEDGE USING ITEM 614 ASPHALT CONCRETE FOR MAINTAINING TRAFFIC.

CONSTRUCTION "BUMP" (W8-1-36) AND "ADVISORY SPEED" (W13-1-24) SIGNS SHALL BE ERCTED AND MAINTAINED DURING THE PERIOD THE BUTT JOINT IS LEFT OPEN. THESE SIGNS SHALL BE PAID FOR UNDER THE LUMP SUM ITEM FOR ITEM 614 MAINTAINING TRAFFIC.

**ROLLER REQUIREMENTS WITHIN VILLAGE OF SAVANNAH**

WITHIN THE VILLAGE OF SAVANNAH (APP. SLM 14.25 TO 14.51), THE CONTRACTOR SHALL NOT USE A VIBRATORY ROLLER TO COMPACT THE ASPHALT CONCRETE.

**ITEM 442 - ASPHALT CONCRETE SURFACE COURSE, 9.5 MM, TYPE A (446), AS PER PLAN WITHIN THE VILLAGE OF SAVANNAH ASD-302-14.25 TO 14.51**

ALL OPEN TRANSVERSE JOINTS SHALL BE TAPERED TO MEET EXISTING PAVEMENT BEFORE INTRODUCING TRAFFIC. A "BUMP" SIGN (W8-1-36) SHALL BE ERCTED ON EACH SIDE OF TRANSVERSE JOINTS LEFT OPEN OVER NIGHT, INCLUDING A SPEED ADVISORY SIGN. THESE SIGNS SHALL BE REMOVED IMMEDIATELY AFTER JOINT HAS BEEN CLOSED. PLACEMENT OF SIGNS SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 614 MAINTAINING TRAFFIC.

CARE SHALL BE TAKEN TO MATCH EXISTING PAVEMENT ELEVATIONS AT EXISTING PAVED BERMS, DRIVES, INTERSECTIONS, ETC.

REQUIREMENTS OF 442 APPLY EXCEPT AS FOLLOWS:  
MIX DESIGN: FOR N<sub>60s</sub> USE 50 GYRATIONS, FOR N<sub>max</sub> USE 75 GYRATIONS. MINIMUM TOTAL PG BINDER CONTENT IS 6.0 PERCENT.  
USE A PG 64-22 BINDER.  
MAXIMUM RECLAIMED ASPHALT CONCRETE PAVEMENT IS 20 PERCENT. WHEN AN AGGREGATE SOURCE IS SPECIALLY DESIGNATED WITH AN SR ON THE AGGREGATE GRAVITY LIST DO NOT USE THE AGGREGATE EXCEPT AS ALLOWED FOR MEDIUM TRAFFIC IN THE GUIDELINES FOR MAINTAINING ADEQUATE PAVEMENT FRICTION IN SURFACE PAVEMENT.  
QUALITY CONTROL: DO NOT PERFORM N<sub>max</sub> IN QUALITY CONTROL TESTING. DO NOT TAKE EXTRA ASPHALT BINDER SAMPLES AS OUTLINED IN CMS 442.05.

THE CONTRACTOR IS REQUIRED TO COMPLETE A TEST STRIP OF THE ITEM 442: ASPHALT CONCRETE SURFACE COURSE, 9.5 MM TYPE A (446), AS PER PLAN. THE TEST STRIP SHALL CONSIST OF 50 TO 100 TONS OF THE CONTRACT SPECIFIED ASPHALT SURFACE COURSE PLACED AND COMPACTED WITHOUT THE USE OF VIBRATORY ROLLERS. ENSURE BASIC COMPACTION PRACTICES SUCH AS PROPER MIX TEMPERATURES, ROLLERS TIGHT TO THE PAVER AND ADEQUATE NUMBER OF ROLLERS VS. PAVER SPEED ARE FOLLOWED. THE CONTRACTOR SHALL OBTAIN AND TEST 3 RANDOM CORES OF THE COMPACTED TEST STRIP. IF THE AVERAGE OF THE CORE RESULTS ARE BELOW 92.0 PERCENT ADJUST THE MIX OR COMPACTION AS NECESSARY AND ALLOWABLE PER SPECIFICATION AND REPEAT THE TEST STRIP. DO NOT BEGIN FULL PRODUCTION OF THE ASPHALT SURFACE COURSE UNTIL THE ENGINEER HAS ACCEPTED THE TEST STRIP. THE TEST STRIP WILL BE INCLUDED IN THE FIRST LOT FOR DETERMINING DENSITY FOR PAYMENT. TEST STRIPS ARE INCIDENTAL TO THE PAY ITEM.

**MAINTENANCE OF TRAFFIC**

**ITEM 614 - WORK ZONE MARKING SIGN**

THE FOLLOWING ESTIMATED QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY FOR USE AS DIRECTED BY THE ENGINEER FOR TEMPORARY WORK ZONE MARKING SIGNS PER THE REQUIREMENTS OF THE CONSTRUCTION AND MATERIALS SPECIFICATIONS, 614.04.

WORK ZONE MARKING SIGN: (W8-H12A-36) NO EDGE LINE = 26 EACH  
WORK ZONE MARKING SIGN: (R4-1-24) DO NOT PASS = 36 EACH  
WORK ZONE MARKING SIGN: (R4-2-24) PASS WITH CARE = 34 EACH  
TOTAL = 96 EACH

**ITEM 614 - ASPHALT CONCRETE FOR MAINTAINING TRAFFIC**

THE FOLLOWING ESTIMATED QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY TO CONSTRUCT A TEMPORARY ASPHALT WEDGE FROM THE EXISTING PAVEMENT TO THE PLANED SURFACE AT BUTT JOINTS AND OTHER LOCATIONS THAT RESULT IN A DROP-OFF. THIS QUANTITY SHALL ALSO BE USED AT PLANED SURFACES WHERE A TEMPORARY ASPHALT WEDGE IS NEEDED AROUND CASTINGS. BEFORE RESURFACING OF THE PAVEMENT, THE TEMPORARY WEDGE SHALL BE REMOVED AND THE COST SHALL BE CONSIDERED INCIDENTAL TO ITEM 614 - ASPHALT CONCRETE FOR MAINTAINING TRAFFIC.

ITEM 614 - ASPHALT CONCRETE FOR MAINTAINING TRAFFIC 25 CU YD

**PLACEMENT OF ASPHALT CONCRETE**

TWO-WAY TRAFFIC SHALL BE MAINTAINED AT ALL TIMES EXCEPT THAT ONE-WAY TRAFFIC WILL BE PERMITTED FOR MINIMUM PERIODS OF TIME CONSISTENT WITH THE REQUIREMENTS OF THE SPECIFICATIONS FOR PROTECTION OF COMPLETED ASPHALT CONCRETE COURSES.

**446 DENSITY ACCEPTANCE WITH FLAGGER CLOSING OF A 2-LANE HIGHWAY FOR PAVING OPERATIONS**

THIS PLAN NOTE APPLIES ONLY TO A FLAGGER CLOSURE OF ONE LANE OF A 2-LANE HIGHWAY DURING PAVING OPERATIONS WHEN USING STANDARD CONSTRUCTION DRAWING MT-97.11 OR MT-97.12, AND ALLOWS A PAVING OPERATION TO PROCEED CONCURRENTLY WITH THE MARKING AND CUTTING OF CORES REQUIRED FOR 446 DENSITY ACCEPTANCE.

IN ALL CASES THE CONTRACTOR SHOULD LENGTHEN THEIR LANE CLOSURES TO THE MAXIMUM PERMISSIBLE LENGTH DETAILED IN THE ABOVE REFERENCED STANDARD CONSTRUCTION DRAWINGS TO ALLOW THE ENGINEER ADEQUATE TIME TO MARK THE REQUIRED CORE LOCATIONS AND FOR CORE CUTTING OPERATIONS.

THE CONTRACTOR WILL PROVIDE TO THE ENGINEER THE PLANNED QUANTITY THAT WILL BE PLACED FOR THE DAY'S PRODUCTION. EACH DAY'S PRODUCTION WILL BE CONSIDERED ONE LOT AND INCLUDES SHOULDERS. TEN CORES WILL BE OBTAINED BY THE CONTRACTOR FOR EACH LOT AT RANDOM LOCATIONS DETERMINED BY THE ENGINEER. THE ENGINEER WILL DIVIDE A LOT INTO FIVE EQUAL SUBLOTS AND CALCULATE TWO RANDOM CORE LOCATIONS IN EACH SUBLOT AS DESCRIBED IN C&MS 446.05.

THE ENGINEER WILL MARK THE CORE LOCATIONS AFTER THE PAVING OPERATION (INCLUDING THE FINISH ROLLER) HAS COMPLETELY PASSED THE RANDOMLY SELECTED CORE LOCATION. THE CONTRACTOR SHOULD DETERMINE WHEN IT IS APPROPRIATE TO START THE CORE DRILL OPERATION AND BEGIN CUTTING CORES WHEN THE NEWLY PLACED PAVEMENT SURFACE TEMPERATURE IS LESS THAN 140°F. IT IS THE CONTRACTOR'S RESPONSIBILITY TO MAINTAIN THE LANE CLOSURE DURING ALL PAVING, CORE MARKING, AND CORING OPERATIONS PER THE REQUIREMENTS OF THE STANDARD CONSTRUCTION DRAWING USED FOR THE PAVING OPERATION.

DESIGN FILE:\$\$\$\$\$.DGN FILE SPECIFICATIONS\$\$\$\$\$  
WORKSTATION\$TERMINAL\$ DATE:\$\$\$\$\$DATE\$\$\$\$\$  
MODELNAME: \$MODELNAME\$

CALCULATED  
MAE  
CHECKED  
CAD  
GENERAL NOTES  
ASD-302-0.00  
5  
42

**ITEM SPECIAL, MAILBOX SUPPORT SYSTEM**

THIS ITEM OF WORK SHALL CONSIST OF THE REMOVAL OF EXISTING NON-STANDARD MAILBOX SUPPORTS AND FURNISHING AND ERECTING MAILBOX SUPPORTS AND ANY ASSOCIATED HARDWARE IN ACCORDANCE WITH THE DETAILS SHOWN, AND ATTACHING AN OWNER SUPPLIED MAILBOX, AT LOCATIONS DETERMINED BY THE ENGINEER.

IN ABSENCE OF A NEW BOX SUPPLIED BY THE OWNER THE CONTRACTOR SHALL SALVAGE THE EXISTING BOX AND PLACE IT ON THE NEW SUPPORT. DUE CARE SHALL BE EXERCISED IN SUCH AN OPERATION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING OR REPLACING ANY BOX DAMAGED BY IMPROPER HANDLING, AS JUDGED AND DIRECTED BY THE ENGINEER.

THE BOX SHALL BE SECURELY AND NEATLY ATTACHED BY THE CONTRACTOR TO THE NEW SUPPORT. THE CONTRACTOR SHALL SUPPLY ALL NECESSARY ATTACHMENT HARDWARE (NUTS, BOLTS, PLATES, SPACERS AND WASHERS) AS NECESSARY TO ACCOMMODATE THE COMPLETE INSTALLATION. SUPPORT HARDWARE SHALL ACCOMMODATE EITHER A SINGLE OR A DOUBLE MAILBOX INSTALLATION, AND NO MORE THAN TWO MAILBOXES MAY BE MOUNTED ON A SINGLE POST. [HARDWARE SHALL BE COMMERCIAL GRADE GALVANIZED STEEL.]

WOOD POSTS SHALL BE NOMINAL 4 IN. x 4 IN. (S4S) OR 4 1/2 IN. DIAMETER ROUND, AND CONFORM TO 710.14. STEEL POSTS SHALL BE NOMINAL PIPE SIZE 2 IN. I.D., AND CONFORM TO AASHTO M 181.

POSTS SHALL BE SET AS PER THE FIRST PARAGRAPH OF 606.03, AND SHALL IN NO INSTANCE BE ENCASED IN CONCRETE.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING WORK WITH THE LOCAL POST MASTER AND NOTIFYING THE PROPERTY OWNERS PRIOR TO WORK.

GROUP MAILBOX SUPPORTS SHALL BE PLACED ON 3 FT. CENTERS AND THE TURNOUT LENGTHENED TO ACCOMMODATE THE GROUPING.

WHERE GUARDRAIL EXISTS, MAILBOXES AND THEIR SUPPORTS SHALL BE PLACED BEHIND THE GUARDRAIL. SUPPORTS MUST STILL MEET THE BREAKAWAY REQUIREMENTS LISTED ABOVE.

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY TO BE USED AS DESCRIBED ABOVE.

ITEM SPECIAL-MAILBOX SUPPORT SYSTEM, SINGLE  
TOTAL (01/STR/PV) = 1 EACH

**MAILBOX APPROACHES**

THE MAILBOX APPROACHES SHALL BE PAVED WITH THE CORRESPONDING MAINLINE PAVEMENT TREATMENT AS DETAILED IN THE TYPICAL SECTIONS. THEY SHALL CONFORM AS MUCH AS PRACTICAL TO STANDARD DRAWING BP-4.1 OR AS DIRECTED BY THE ENGINEER.

GRADING SHALL BE PERFORMED IN THESE AREAS TO OBTAIN A BASE WHICH WILL ALLOW THE FINISHED GRADE TO BE FLUSH WITH ADJACENT PAVEMENT. A QUANTITY OF ITEM 617 COMPACTED AGGREGATE HAS BEEN PROVIDED FOR AREAS WHERE THE SHOULDER IS LOW PRIOR TO GRADING AND/OR LOW AREAS CAUSED BY THE REMOVAL OF UNSUITABLE MATERIAL. QUANTITIES TO PERFORM THIS WORK HAVE BEEN INCLUDED IN THE GENERAL SUMMARY AND ARE ESTIMATED AS FOLLOWS.

ITEM 209 - GRADING MAILBOX APPROACHES  
S.R. 302 (01/STR/PV) = 114 EACH

ITEM 617 - COMPACTED AGGREGATE  
S.R. 302 (01/STR/PV) = 228 CY

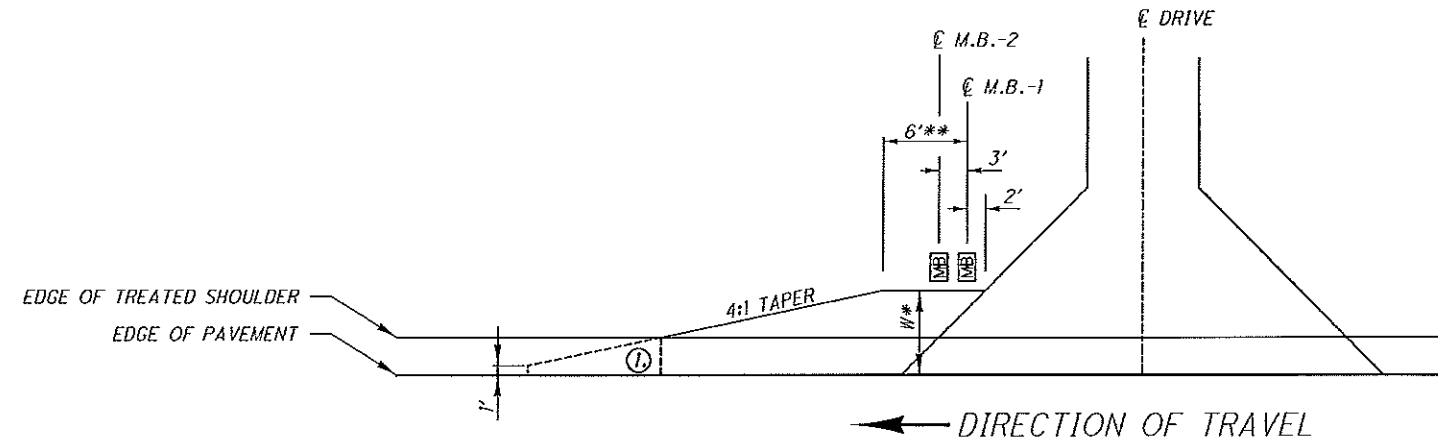
**LOCATIONS OF MAILBOX SUPPORT SYSTEM TO BE REPLACED**

ADDRESSES AND/OR LOCATIONS OF MAILBOX SUPPORT SYSTEM TO BE REPLACED:

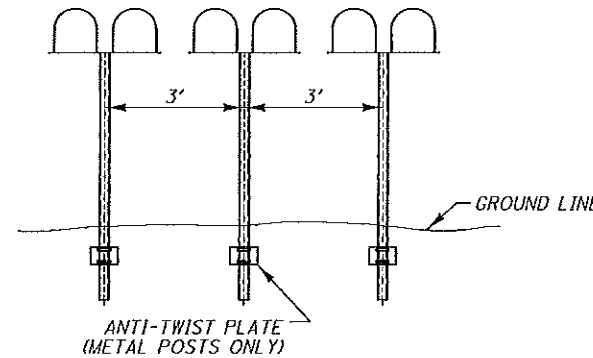
SINGLE SUPPORT SYSTEMS:

7.95 S.R. 302

FOR DETAILS NOT SHOWN SEE STANDARD DRAWING BP-4.1



① END MAILBOX TURNOUT AT EDGE OF ASPHALT CONCRETE SHOULDER OR 1' FROM EDGE OF PAVEMENT IF TREATED SHOULDER IS AGGREGATE.



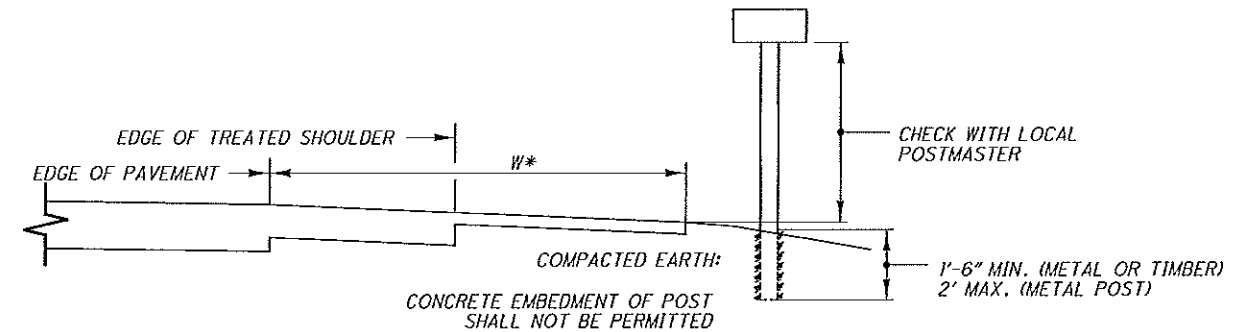
GROUP MAILBOX INSTALLATION

**\*\* NOTES**

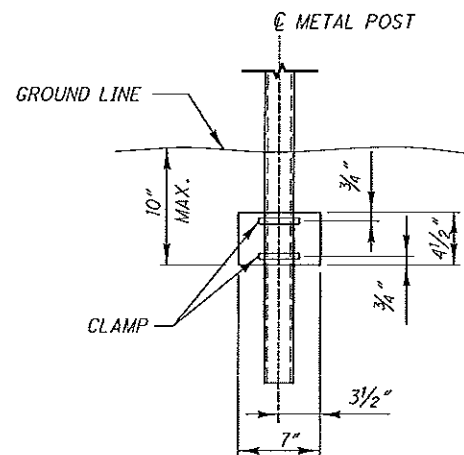
- 1) WHERE EXISTING STANDARD MAILBOX POSTS ARE BEHIND GUARDRAIL AND ARE TO REMAIN IN PLACE, TURNOUT WIDTH SHALL EXTEND TO FACE OF GUARDRAIL.
- 2) WHERE NO GUARDRAIL IS REQUIRED, TURNOUT WIDTH SHALL BE 6 FT MAXIMUM OR TO FACE OF EXISTING STANDARD MAILBOX IF IT IS LESS THAN 6 FT.
- 3) IF THE MAILBOX SUPPORT IS SPECIFIED TO BE REMOVED AND REERECTED OR REPLACED, WHERE GUARDRAIL IS REQUIRED, TURNOUT WIDTH SHALL EXTEND TO FACE OF GUARDRAIL AND MAILBOX SHALL BE INSTALLED BEHIND THE GUARDRAIL.
- 4) IF THE MAILBOX SUPPORT IS SPECIFIED TO BE REMOVED AND REERECTED OR REPLACED, WHERE NO GUARDRAIL IS REQUIRED, TURNOUT WIDTH SHALL BE 6 FT. MAXIMUM.

**\*\* NOTE**

- 1) 6 FT FOR ONE MAILBOX SUPPORT, ADD 3 FT. FOR EACH ADDITIONAL MAILBOX SUPPORT.



CROSS SECTION / ELEVATION VIEW



ANTI-TWIST PLATE

MODELNAME: \$MODEL.NAMES

DESIGN FILE: \$\$\$\$\$.DGN FILE SPECIFICATION: \$\$\$\$\$.DWG  
WORKSTATION: \$\$\$\$\$.TERMINAL\$ DATE: \$\$\$\$\$.DATE\$\$\$\$\$

DESIGN FILE:\$\$\$\$.DGNFILESPECIFICATIONS\$\$\$\$\$  
 WORKSTATION\$TERMINAL\$ DATE:\$\$\$\$DATE\$\$\$\$\$  
 MODELNAME: \$MODELNAME\$

SHEET NUMBER											PARTICIPATION			ALT (X)	ITEM	ITEM EXT	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
3	4	5	6	9	13	17	18	19	20		01/STR/P V	02/STR/B R	03/IMS/BR							
ROADWAY																				
					12.5						12.5			202	38000	12.5	FT	GUARDRAIL REMOVED		
					275						275			202	38200	275	FT	GUARDRAIL REMOVED FOR REUSE		
					3						3			202	42040	3	EACH	ANCHOR ASSEMBLY REMOVED, TYPE T		
					4						4			202	47200	4	EACH	BRIDGE TERMINAL ASSEMBLY REMOVED FOR REUSE		
					6						6			203	20001	6	CY	EMBANKMENT, AS PER PLAN	12	
			114		3.25						3.25			209	15000	3.25	STA	RESHAPING UNDER GUARDRAIL		
					114						114			209	80000	114	EACH	GRADING MAILBOX APPROACHES		
					12.5						12.5			606	13000	12.5	FT	GUARDRAIL, TYPE 5		
					275						275			606	16500	275	FT	GUARDRAIL REBUILT, TYPE 5		
					3						3			606	26500	3	EACH	ANCHOR ASSEMBLY, TYPE T		
					4						4			606	35150	4	EACH	BRIDGE TERMINAL ASSEMBLY REBUILT, TYPE 4		
2					2						2			623	39500	2	EACH	MONUMENT BOX ADJUSTED TO GRADE		
			1		1						1			SPECIAL	69050100	1	EACH	MAILBOX SUPPORT SYSTEM, SINGLE	6	
DRAINAGE																				
	1										1			611	98630	1	EACH	CATCH BASIN ADJUSTED TO GRADE		
PAVEMENT																				
					28.12						28.12			209	72051	28.12	MILE	PREPARING SUBGRADE FOR SHOULDER PAVING, AS PER PLAN	3	
	1750				1750						1750			251	01010	1750	CY	PARTIAL DEPTH PAVEMENT REPAIR		
					202625						202625			254	01000	202625	SY	PAVEMENT PLANING, ASPHALT CONCRETE		
					2029						2029			254	01600	2029	SY	PATCHING PLANED SURFACE		
					16210						16210			407	10000	16210	GAL	TACK COAT		
					8460						8460			442	00201	8460	CY	ASPHALT CONCRETE SURFACE COURSE, 9.5 MM, TYPE A (446), AS PER PLAN	5	
					403						403			442	00201	403	CY	ASPHALT CONCRETE SURFACE COURSE, 9.5 MM, TYPE A (446), AS PER PLAN (SAFETY EDGE)	5	
			228		1452						1680			617	10100	1680	CY	COMPACTED AGGREGATE		
					56						56			618	40101	56	FT	RUMBLE STRIPS, (ASPHALT CONCRETE), AS PER PLAN	11	
TRAFFIC CONTROL																				
					542						542			621	00100	542	EACH	RPM		
					542						542			621	54000	542	EACH	RAISED PAVEMENT MARKER REMOVED		
					8						8			626	00100	8	EACH	BARRIER REFLECTOR		
					28.36						28.36			642	00104	28.36	MILE	EDGE LINE, 6", TYPE 1		
					14.18						14.18			642	00300	14.18	MILE	CENTER LINE, TYPE 1		
					518						518			644	00500	518	FT	STOP LINE		
					120						120			644	00600	120	FT	CROSSWALK LINE		
					2						2			644	01000	2	EACH	RAILROAD SYMBOL MARKING		
STRUCTURE 20 FOOT SPAN AND OVER ASD-302-0.89 SFN 0305200																				
					187.5						187.5			202	38603	187.5	FT	BRIDGE RAILING REMOVED FOR REUSE, AS PER PLAN	22	
					64						64			202	98200	64	FT	REMOVAL MISC.: POLYMER MODIFIED ASPHALT EXPANSION JOINT SYSTEM	22	
					304						304			254	01000	304	SY	PAVEMENT PLANING, ASPHALT CONCRETE		
					24.3						24.3			407	10000	24.3	GAL	TACK COAT		
					25.3						25.3			442	00201	25.3	CY	ASPHALT CONCRETE SURFACE COURSE, 9.5 MM, TYPE A (446), AS PER PLAN	5	
					64						64			846	00100	64	FT	POLYMER MODIFIED ASPHALT EXPANSION JOINT SYSTEM		
STRUCTURE 20 FOOT SPAN AND OVER ASD-302-1.53 SFN 0305235																				
					137.5						137.5			202	38603	137.5	FT	BRIDGE RAILING REMOVED FOR REUSE, AS PER PLAN	22	
					70						70			202	98200	70	FT	REMOVAL MISC.: POLYMER MODIFIED ASPHALT EXPANSION JOINT SYSTEM	22	
					196						196			254	01000	196	SY	PAVEMENT PLANING, ASPHALT CONCRETE		
					15.7						15.7			407	10000	15.7	GAL	TACK COAT		
					8.2						8.2			442	00201	8.2	CY	ASPHALT CONCRETE SURFACE COURSE, 9.5 MM, TYPE A (446), AS PER PLAN	5	
					137.5						137.5			517	75600	137.5	FT	DEEP BEAM BRIDGE RETROFIT RAILING	23	
					70						70			846	00100	70	FT	POLYMER MODIFIED ASPHALT EXPANSION JOINT SYSTEM		
STRUCTURE 20 FOOT SPAN AND OVER ASD-302-2.48 SFN 0305278																				
					58						58			202	98200	58	FT	REMOVAL MISC.: POLYMER MODIFIED ASPHALT EXPANSION JOINT SYSTEM	22	
					856						856			254	01000	856	SY	PAVEMENT PLANING, ASPHALT CONCRETE		
					68.5						68.5			407	10000	68.5	GAL	TACK COAT		
					71.3						71.3			442	00201	71.3	CY	ASPHALT CONCRETE SURFACE COURSE, 9.5 MM, TYPE A (446), AS PER PLAN	5	
					670						670			517	72750	670	FT	RAILING (THRIE BEAM RETROFIT)		
					58						58			846	00100	58	FT	POLYMER MODIFIED ASPHALT EXPANSION JOINT SYSTEM		

GENERAL SUMMARY

ASD - 302 - 0.00

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DESIGN FILE:\$\$\$\$\$.DGNFILESPECIFICATIONS\$\$\$\$\$  
 WORKSTATION\$TERMINAL\$ DATE:\$\$\$\$\$DATE\$\$\$\$\$

MODELNAME: \$MODEL NAMES

SHEET NUMBER										PARTICIPATION			ITEM	ITEM EXT	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.		
3	4	5	6	9	13	17	18	19	20	01/STR/P V	02/STR/B R	03/IMS/BR								
													<b>STRUCTURE 20 FOOT SPAN AND OVER ASD-302-5.63 SFN 0305294</b>							
								87.5			87.5		202	38603	87.5	FT	BRIDGE RAILING REMOVED FOR REUSE, AS PER PLAN	22		
								70			70		202	98200	70	FT	REMOVAL MISC.: POLYMER MODIFIED ASPHALT EXPANSION JOINT SYSTEM	22		
								133			133		254	01000	133	SY	PAVEMENT PLANING, ASPHALT CONCRETE			
								10.6			10.6		407	10000	10.6	GAL	TACK COAT			
								5.5			5.5		442	00201	5.5	CY	ASPHALT CONCRETE SURFACE COURSE, 9.5 MM, TYPE A (446), AS PER PLAN	5		
								87.5			87.5		517	76300	87.5	FT	RAILING, MISC.: RAISE EXISTING DEEP BEAM BRIDGE GUARDRAIL	23		
								70			70		846	00100	70	FT	POLYMER MODIFIED ASPHALT EXPANSION JOINT SYSTEM			
													<b>STRUCTURE 20 FOOT SPAN AND OVER ASD-302-9.34 SFN 0305340</b>							
								212.5			212.5		202	38603	212.5	FT	BRIDGE RAILING REMOVED FOR REUSE, AS PER PLAN	22		
								64			64		202	98200	64	FT	REMOVAL MISC.: POLYMER MODIFIED ASPHALT EXPANSION JOINT SYSTEM	22		
								348			348		254	01000	348	SY	PAVEMENT PLANING, ASPHALT CONCRETE			
								27.8			27.8		407	10000	27.8	GAL	TACK COAT			
								64			64		409	30001	64	FT	SAWING AND SEALING ASPHALT CONCRETE PAVEMENT JOINTS, AS PER PLAN	23		
								14.5			14.5		442	00201	14.5	CY	ASPHALT CONCRETE SURFACE COURSE, 9.5 MM, TYPE A (446), AS PER PLAN	5		
								212.5			212.5		517	76300	212.5	FT	RAILING, MISC.: RAISE EXISTING DEEP BEAM BRIDGE GUARDRAIL	23		
								64			64		846	00100	64	FT	POLYMER MODIFIED ASPHALT EXPANSION JOINT SYSTEM			
													<b>STRUCTURE 20 FOOT SPAN AND OVER ASD-302-14.39 0305405</b>							
								4.9			4.9		202	11301	4.9	CY	PORTIONS OF STRUCTURE REMOVED, AS PER PLAN	23		
								42			42		202	98200	42	FT	REMOVAL MISC.: JOINT SEALER	22		
								1.8			1.8		511	34410	1.8	CY	CLASS QC2 CONCRETE, SUPERSTRUCTURE (REPAIR)			
								3.1			3.1		511	53012	3.1	CY	CLASS QC2 CONCRETE, MISC.: APPROACH SLAB REPAIR	23		
								193			193		512	10300	193	SY	SEALING CONCRETE BRIDGE DECKS WITH HMWM RESIN			
								42			42		516	31000	42	FT	JOINT SEALER			
								17			17		814	13202	17	EACH	BARRIER REFLECTOR, TYPE A2			
								0.19			0.19		614	21200	0.19	MILE	WORK ZONE CENTER LINE, CLASS I, 740.06, TYPE I			
								0.23			0.23		614	22200	0.23	MILE	WORK ZONE EDGE LINE, CLASS I, 740.06, TYPE I			
								20			20		614	26400	20	FT	WORK ZONE STOP LINE, CLASS I, 740.06, TYPE I			
													<b>MAINTENANCE OF TRAFFIC</b>							
		96									96		614	12460	96	EACH	WORK ZONE MARKING SIGN			
		25									25		614	13000	25	CY	ASPHALT CONCRETE FOR MAINTAINING TRAFFIC			
						28.36					28.36		614	20500	28.36	MILE	WORK ZONE LANE LINE, CLASS II, 642 PAINT			
						518					518		614	26200	518	FT	WORK ZONE STOP LINE, CLASS I, 642 PAINT			
										LS			614	11000	LS		MAINTAINING TRAFFIC			
										5			619	16010	5	MNTH	FIELD OFFICE, TYPE B			
										LS			623	10000	LS		CONSTRUCTION LAYOUT STAKES AND SURVEYING			
										LS			624	10000	LS		MOBILIZATION			

GENERAL SUMMARY

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ASD - 302 - 0.00

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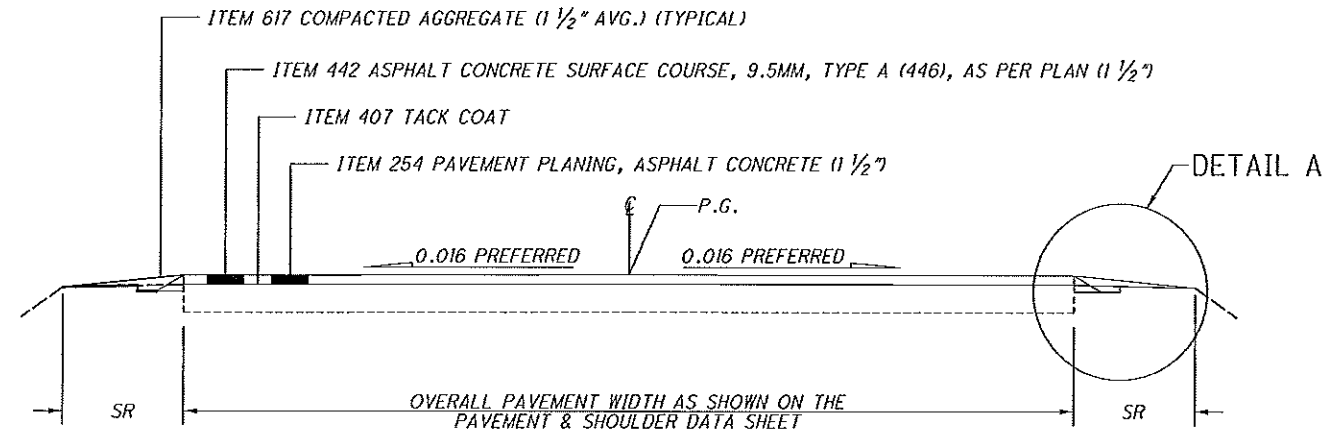


\* - FOR TYPICALS, SEE SHEET 10

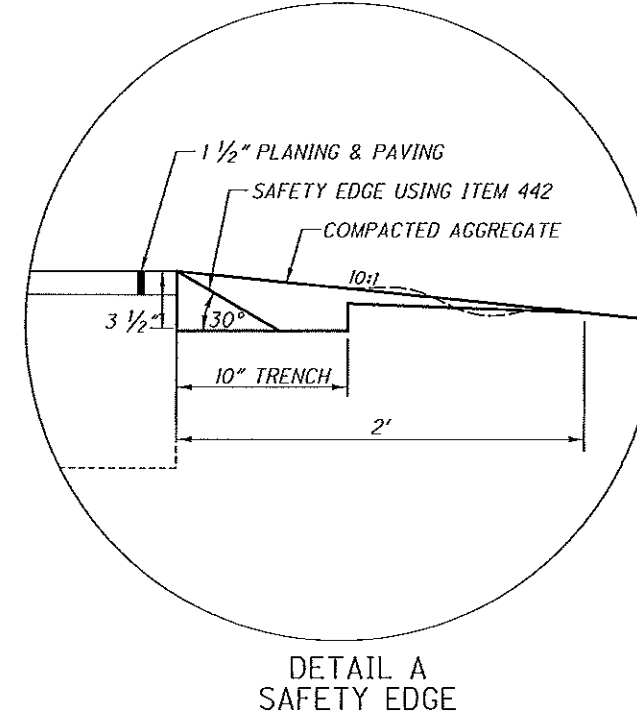
COUNTY	ROUTE	LOG POINT TO LOG POINT		LENGTH		WIDTH FEET AVG.	*TYPICAL	PAVEMENT AREA	254			407	442		442	618	AGGREGATE SHOULDER PROPOSED WIDTH		AGGREGATE SHOULDER AREA	209	617				
				MILE	FEET				PAVEMENT PLANING, ASPHALT CONCRETE (1.50')	PATCHING PLANED SURFACE	TACK COAT @ 0.08 GAL/SY	ASPHALT CONCRETE SURFACE COURSE, 9.5 MM, TYPE A (446), AS PER PLAN	ASPHALT CONCRETE SURFACE COURSE, 9.5 MM, TYPE A (446), AS PER PLAN (SAFETY EDGE)	RUMBLE STRIPS, (ASPHALT CONCRETE), AS PER PLAN	SL	SR	PREPARING SUBGRADE FOR SHOULDER PAVING, AS PER PLAN	1.5 INCHES		AVG. THICKNESS					
		STRAIGHT LINE MILEAGE		SO YD	SO YD	SO YD	GALLON	INCH	CU YD	CU YD	FT	FT	FT	SO YD	MILE	CU YD									
(01/STR/PV)																									
ASD	302	0.00	0.89	0.89	4699	24.0	1	12,531	12,531		125	1,002	1.5	522	25			2.0	2.0	2,088	1.78		87		
SUSPEND AND RESUME PAVEMENT TREATMENT AT STR. ASD-302-0.89																									
ASD	302	0.90	1.00	0.10	528	24.0	1	1,408	1,408		14	113	1.5	59	3			2.0	2.0	235	0.20		10		
ASD	302	1.00	1.53	0.53	2798	24.0	1	7,461	7,461		75	597	1.5	311	15			2.0	2.0	1,244	1.06		52		
SUSPEND AND RESUME PAVEMENT TREATMENT AT STR. ASD-302-1.53																									
ASD	302	1.54	2.00	0.46	2429	24.0	1	6,477	6,477		65	518	1.5	270	13			2.0	2.0	1,080	0.92		45		
ASD	302	2.00	2.48	0.48	2534	24.0	1	6,757	6,757		68	541	1.5	282	14			2.0	2.0	1,126	0.96		47		
SUSPEND AND RESUME PAVEMENT TREATMENT AT STR. ASD-302-2.48																									
ASD	302	2.49	3.00	0.51	2693	24.0	1	7,181	7,181		72	575	1.5	299	15			2.0	2.0	1,197	1.02		50		
ASD	302	3.00	4.00	1.00	5280	24.0	1	14,080	14,080		141	1,126	1.5	587	29			2.0	2.0	2,347	2.00		98		
ASD	302	4.00	4.12	0.12	634	24.0	1	1,691	1,691		17	135	1.5	70	3	28		2.0	2.0	282	0.24		12		
SUSPEND AND RESUME PAVEMENT TREATMENT AT USR 42																									
ASD	302	4.14	5.00	0.86	4541	24.0	1	12,109	12,109		121	969	1.5	505	25	28		2.0	2.0	2,018	1.72		84		
ASD	302	5.00	5.29	0.29	1531	24.0	1	4,083	4,083		41	327	1.5	170	8			2.0	2.0	680	0.58		28		
SUSPEND AND RESUME PAVEMENT TREATMENT AT SR 89																									
ASD	302	5.31	5.63	0.32	1690	24.0	1	4,507	4,507		45	361	1.5	188	9			2.0	2.0	751	0.64		31		
SUSPEND AND RESUME PAVEMENT TREATMENT AT STR. ASD-302-5.63																									
ASD	302	5.64	6.00	0.36	1901	24.0	1	5,069	5,069		51	406	1.5	211	10			2.0	2.0	845	0.72		35		
ASD	302	6.00	7.00	1.00	5280	24.0	1	14,080	14,080		141	1,126	1.5	587	29			2.0	2.0	2,347	2.00		98		
ASD	302	7.00	8.00	1.00	5280	24.0	1	14,080	14,080		141	1,126	1.5	587	29			2.0	2.0	2,347	2.00		98		
ASD	302	8.00	8.84	0.84	4435	24.0	1	11,827	11,827		118	946	1.5	493	24			2.0	2.0	1,971	1.68		82		
SUSPEND AND RESUME PAVEMENT TREATMENT AT SR 58																									
ASD	302	8.86	9.00	0.14	739	24.0	1	1,971	1,971		20	158	1.5	82	4			2.0	2.0	328	0.28		14		
ASD	302	9.00	9.34	0.34	1795	24.0	1	4,787	4,787		48	383	1.5	199	10			2.0	2.0	798	0.68		33		
SUSPEND AND RESUME PAVEMENT TREATMENT AT STR. ASD-302-9.34																									
ASD	302	9.35	10.00	0.65	3432	24.0	1	9,152	9,152		92	732	1.5	381	19			2.0	2.0	1,525	1.30		64		
ASD	302	10.00	10.89	0.89	4699	24.0	1	12,531	12,531		125	1,002	1.5	522	25			2.0	2.0	2,088	1.78		87		
SUSPEND AND RESUME PAVEMENT TREATMENT AT SR 511																									
ASD	302	11.22	12.00	0.78	4118	24.0	1	10,981	10,981		110	879	1.5	458	22			2.0	2.0	1,830	1.56		76		
ASD	302	12.00	13.00	1.00	5280	24.0	1	14,080	14,080		141	1,126	1.5	587	29			2.0	2.0	2,347	2.00		98		
ASD	302	13.00	14.00	1.00	5280	24.0	1	14,080	14,080		141	1,126	1.5	587	29			2.0	2.0	2,347	2.00		98		
ASD	302	14.00	14.39	0.39	2059	24.0	1	5,491	5,491		55	439	1.5	229	11			2.0	2.0	915	0.78		38		
SUSPEND AND RESUME PAVEMENT TREATMENT AT STR. ASD-302-14.39																									
ASD	302	14.40	14.51	0.11	581	24.0	1	1,549	1,549		15	124	1.5	65	3			2.0	2.0	258	0.22		11		
(01/STR/PV)																									
EXTRA AREA FOR INTERSECTIONS								3493	3493		35	279	1.5	146											
EXTRA AREA FOR PAVED DRIVES								369	369		4	30	1.5	15											
EXTRA AREA FOR AGGREGATE DRIVES								1818											1818				76		
EXTRA AREA FOR EX. & PR. MAILBOX APPROACHES								1140	800		8	64	1.5	48											
<b>GRAND TOTAL</b>				<b>14.06</b>	<b>74237</b>			<b>204,783</b>	<b>202,625</b>		<b>2,029</b>	<b>16,210</b>		<b>8,460</b>	<b>403</b>	<b>56</b>					<b>28.12</b>		<b>1,452</b>		

DESIGN FILE:\$\$\$\$\$.DGN FILE SPECIFICATION:\$\$\$\$\$ WORKSTATION:TERMINAL.\$ DATE:\$\$\$\$\$DATE\$\$\$\$\$ MODELNAME: \$MODELNAME\$

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**PAVEMENT AND SHOULDER DATA**  
**ASD-302-0.00**  
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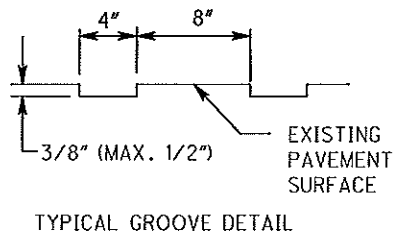
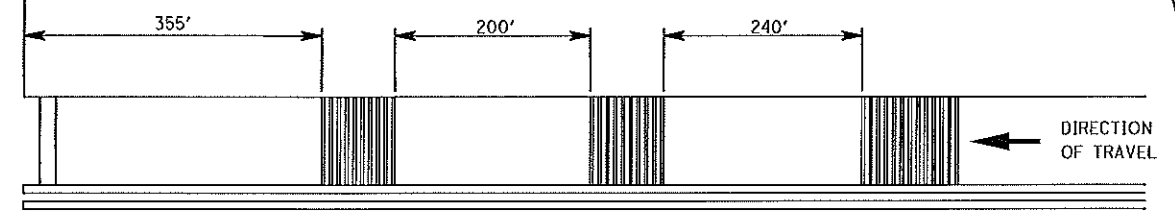
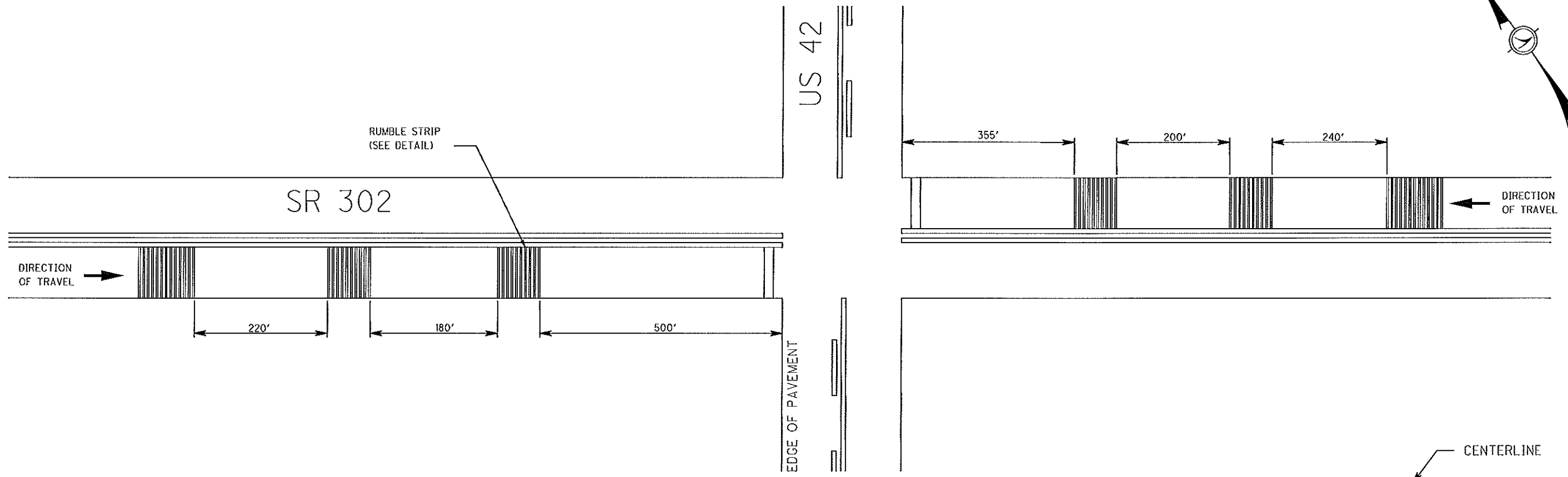
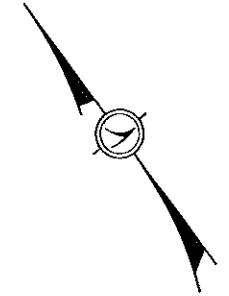


TYPICAL 1



TYPICAL SECTIONS

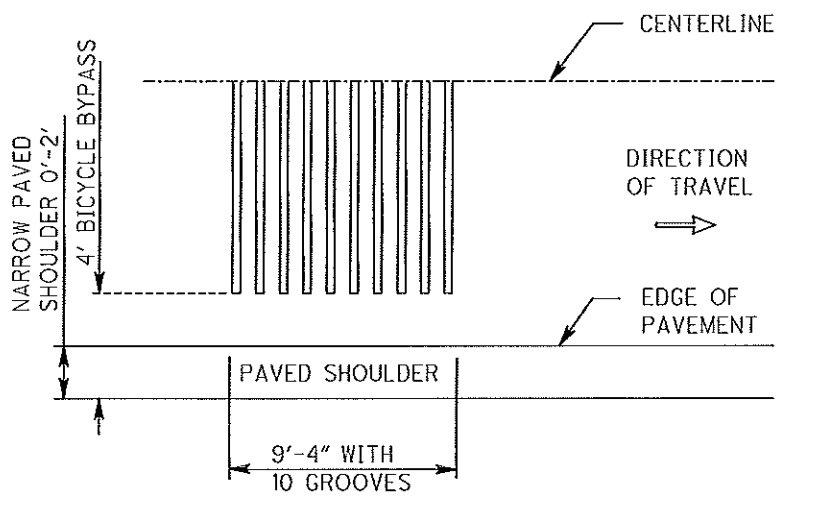
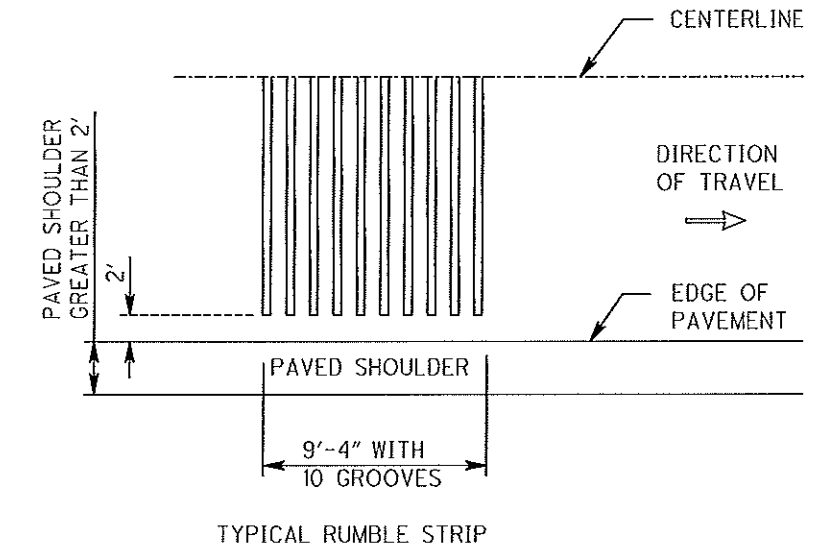
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THE PROPOSED RUMBLE STRIPS SHALL CONSIST OF PARALLEL GROOVES CUT AT ONE FOOT INTERVALS.

ALL DIMENSIONS SHOWN ARE NOMINAL AND SHOULD BE CONSIDERED TO BE + 1/8 INCH.

EACH GROOVE SHALL BE CUT TO A DEPTH OF APPROXIMATELY 3/8 INCH WITH ALLOWANCE FOR PAVEMENT SURFACE IRREGULARITIES AND VARIATIONS, WIDTH OF THE GROOVE AT THE PAVEMENT SURFACE IS TO BE 4 INCHES.



NOTES

- 1) RELATIVE PLACEMENT OF RUMBLE STRIPS IS TIED TO THE EDGE OF PAVEMENT.
- 2) PROVIDE 4 FT BICYCLE PATH AROUND THE RUMBLE STRIPS. IF CURB AND GUTTER EXIST, DO NOT USE GUTTER WIDTH AS A BIKE PATH (SEE TYPICAL RUMBLE STRIP DETAILS).

DESIGN FILE:\$\$\$\$\$.DGN FILE SPECIFICATIONS:\$\$\$\$\$ WORKSTATION:TERMINAL\$ DATE:\$\$\$\$\$DATE\$\$\$\$\$ MODELNAME: \$MODELNAME\$

**CONNECTING GUARDRAIL TO EXISTING RAIL**

IN LOCATIONS WHERE TYPE 5 GUARDRAIL, TERMINAL ASSEMBLIES, ETC. ARE TO BE CONNECTED TO EXISTING RAIL SOME MODIFICATIONS MAY BE REQUIRED, INCLUDING EXTRA POSTS, DRILLING HOLES AND POSSIBLY PARTIAL SECTIONS OF ADDITIONAL RAIL ELEMENTS. THE COST OF THIS ADDITIONAL WORK SHALL BE INCLUDED IN THE UNIT BID PRICE FOR TYPE 5 GUARDRAIL. IF ADDITIONAL PORTIONS OF RAIL ELEMENT ARE USED THE LINEAL MEASUREMENT OF THIS ADDITIONAL PORTION SHALL BE ADDED FOR PAYMENT.

**LOCATIONS OF GUARDRAIL**

THE GUARDRAIL PROTECTION PROVIDED IN THIS PLAN SHALL BE LOCATED IN THE FIELD TO ASSURE THAT THE INSTALLATION WILL AFFORD THE MAXIMUM PROTECTION FOR TRAFFIC. THIS LOCATION SHALL BE POSITIONED AS FAR AS POSSIBLE FROM THE EDGE OF PAVEMENT WHILE MAINTAINING PROPER GRADE IN FRONT OF GUARDRAIL AS PER STANDARD DRAWINGS AND PLAN DETAILS.

**SUGGESTED SEQUENCE OF GUARDRAIL WORK**

1. GUARDRAIL WORK IS TO BEGIN AFTER THE LINEAR GRADING IS COMPLETED AND THE 617 MATERIAL IS PLACED.
2. REMOVE THE GUARDRAIL.
3. PERFORM THE RESHAPING UNDER GUARDRAIL INCLUDING COMPLETING THE EMBANKMENT, AS PER PLAN.
4. REBUILD/CONSTRUCT THE GUARDRAIL RUN.
5. INSTALL BARRIER REFLECTORS.

**CONNECTION BETWEEN EXISTING AND PROPOSED GUARDRAIL**

WHEN IT IS NECESSARY TO SPLICE PROPOSED GUARDRAIL TO EXISTING GUARDRAIL, ONLY THE EXISTING GUARDRAIL SHALL BE CUT, DRILLED, OR PUNCHED. THE CONNECTION SHALL BE MADE USING A "W-BEAM RAIL SPLICE" AS SHOWN ON STANDARD CONSTRUCTION DRAWING GR-1.1. PAYMENT SHALL BE INCLUDED IN THE CONTRACT PRICE FOR THE RESPECTIVE GUARDRAIL ITEMS.

**ITEM 203 - EMBANKMENT, AS PER PLAN**

AT SPECIFIED LOCATIONS AND LOCATIONS AS DIRECTED BY THE ENGINEER, EMBANKMENT SHALL BE PLACED AS TO PROVIDE A SUITABLE AREA TO CONSTRUCT GUARDRAIL AND TO PROVIDE STRUCTURAL INTEGRITY OF THE ROADWAY SHOULDER.

AREAS WHERE EMBANKMENT MATERIAL IS TO BE PLACED SHALL BE SCALPED. THE REQUIREMENTS FOR BENCHING SHALL BE WAIVED. THE DEPTH OF LAYERS IN WHICH THE EMBANKMENT IS PLACED SHALL BE LIMITED TO EIGHT (8) INCHES IN THICKNESS. THE METHOD OF COMPACTION AND EQUIPMENT USED SHALL BE SUFFICIENT TO PROVIDE A MINIMUM OF 60 PERCENT OF RELATIVE COMPACTION.

AFTER THE EMBANKMENT HAS BEEN PLACED, THE AREAS SHALL BE FERTILIZED, SEEDDED, MULCHED, AND WATERED AS PER ITEM 659. THE COST SHALL BE INCLUDED IN THIS ITEM FOR PAYMENT.

THE METHOD OF MEASUREMENT FOR EMBANKMENT MATERIAL SHALL BE BY THE NUMBER OF CUBIC YARDS MEASURED BY LOOSE VOLUME IN THE CARRIER AT THE WORK SITE, IN LIEU OF THE REQUIREMENTS OF 203.09. PAYMENT FOR ACCEPTED QUANTITIES WILL BE MADE AT THE CONTRACT UNIT BID PRICE PER CUBIC YARD FOR ITEM 203 - EMBANKMENT, AS PER PLAN AND SHALL INCLUDE ALL WORK DESCRIBED ABOVE.

**ITEM 209 - RESHAPING UNDER GUARDRAIL**

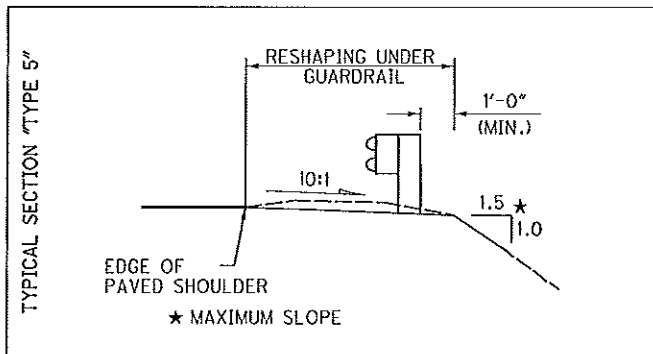
THIS ITEM SHALL BE USED AT LOCATIONS INDICATED IN THE PLANS.

THIS WORK SHALL BE COMPLETED AT LOCATIONS SPECIFIED FOR WORK AS WELL AS PER CMS 209.05 AND AS DESCRIBED HEREIN, AND SHALL AT ALL TIMES BE AS DIRECTED BY THE ENGINEER.

THE AREA IN FRONT OF, UNDER, AND BEHIND THE GUARDRAIL SHALL BE GRADED AND RESHAPED TO PROVIDE AN AREA THAT HAS A SLOPE OF 10:1 MAXIMUM (SEE DETAIL BELOW AS WELL AS THE GUARDRAIL DETAIL SHEETS FOR FURTHER DETAILS AND INFORMATION OF THE LIMITS OF THIS WORK).

EXCESS MATERIAL RESULTING SHALL BE USED ELSEWHERE FOR THIS ITEM IF SO DIRECTED OR DISPOSED OF PROPERLY. IF EXTRA MATERIAL IS REQUIRED IT SHALL BE PAID FOR WITH ITEM 203 - EMBANKMENT, AS PER PLAN. THIS WORK SHALL NOT BE STARTED UNTIL AFTER THE RESURFACING AND BERM WORK HAS BEEN COMPLETED.

THE ABOVE WORK SHALL BE PAID FOR PER STATION WITH ITEM 209, RESHAPING UNDER GUARDRAIL WITH THE EXCEPTION OF ANY EXTRA MATERIAL REQUIRED TO MEET THE SLOPE REQUIREMENTS WHICH SHALL BE PAID BY ITEM 203 - EMBANKMENT, AS PER PLAN.



**ITEM 606 - GUARDRAIL REBUILT, TYPE 5**

THIS ITEM SHALL BE USED WHEN GUARDRAIL REQUIRES REPAIRS IN WHICH THE RAIL ELEMENT IS REUSABLE. ALSO, THIS ITEM WILL BE USED TO RE-ALIGN GUARDRAIL RUNS, AS DIRECTED BY THE ENGINEER.

PAYMENT SHALL INCLUDE ALL LABOR, MATERIALS AND EQUIPMENT, AS DESCRIBED IN 606.05 FOR ITEM 606 GUARDRAIL REBUILT, TYPE 5.

MODELNAME: \$MODELNAME\$

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WORKSTATION: \$TERMINAL\$ DATE: \$\$\$\$\$\$DATE\$\$\$\$\$

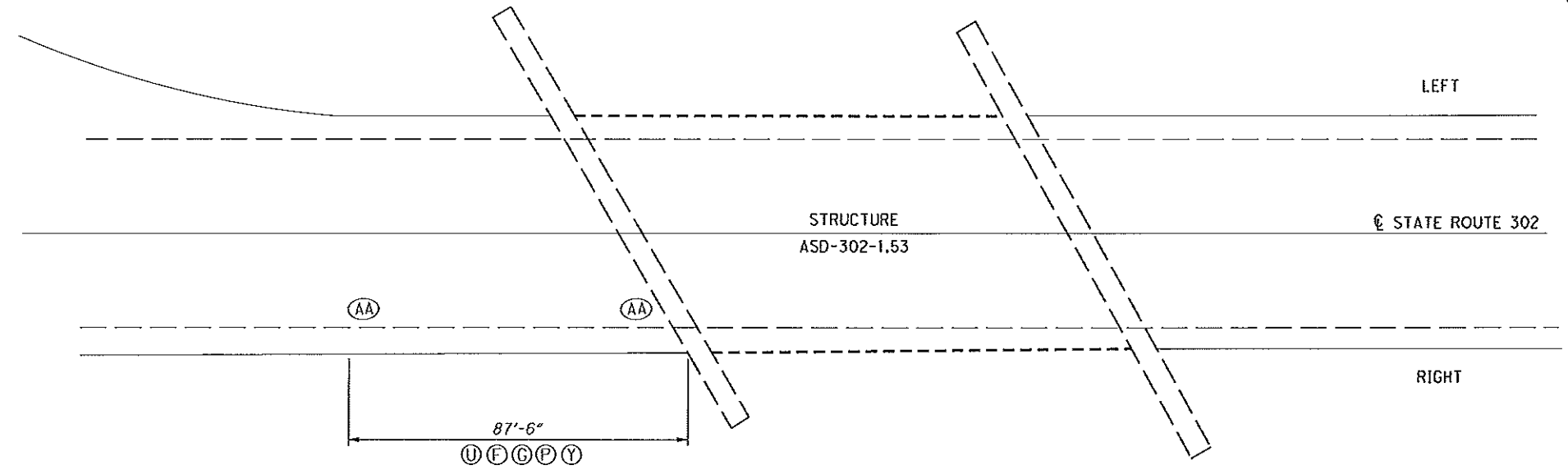
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GUARDRAIL NOTES

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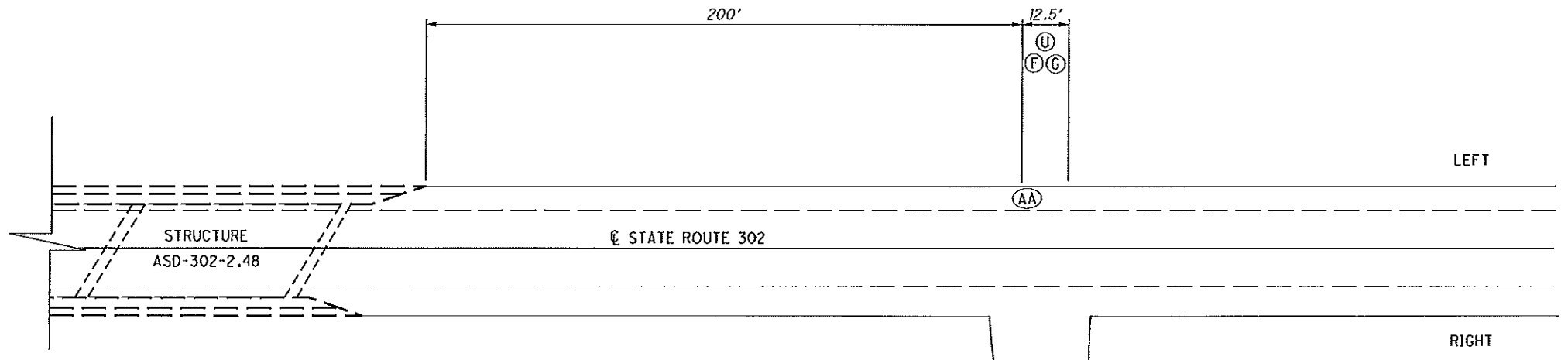
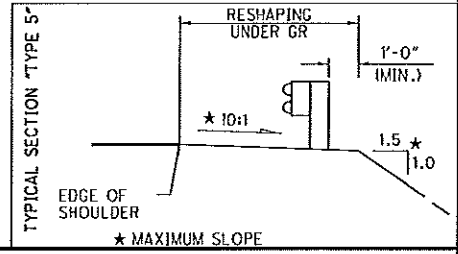
SHEET	LOCATION	FUNDING SPLIT	F	B	O	R	A	P			U	G	L	Z	X	V	M	Q	Y			AA						
			202	202	202	202	202	202	202	202	202	203	209	606	606	606	606	606	606	606	606	608	608	608	626	630	630	630
			GUARDRAIL REMOVED FOR REUSE	ANCHOR ASSEMBLY REMOVED, TYPE A	BRIDGE TERMINAL ASSEMBLY REMOVED	ANCHOR ASSEMBLY REMOVED, TYPE T	GUARDRAIL REMOVED	BRIDGE TERMINAL ASSEMBLY REMOVED FOR REUSE	WALK REMOVED	CURB REMOVED	EMBANKMENT, AS PER PLAN	RESHAPING UNDER GUARDRAIL	GUARDRAIL REBUILT, TYPE 5	GUARDRAIL REBUILT, TYPE 5, USING 9 FOOT POSTS	BRIDGE TERMINAL ASSEMBLY, TYPE 1ST	ANCHOR ASSEMBLY, TYPE A	ANCHOR ASSEMBLY, TYPE T	GUARDRAIL, TYPE 5	RAISING TYPE 5 GUARDRAIL	BRIDGE TERMINAL ASSEMBLY REBUILT, TYPE 4	CURB RAMP, TYPE A2	CURB RAMP, TYPE B1, AS PER PLAN	CURB RAMP, TYPE D	BARRIER REFLECTOR	GROUND MOUNTED SUPPORT, NO. 3 POST	REMOVAL OF GROUND MOUNTED SIGN AND REERECTION	REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL	
			FEET	EACH	EACH	EACH	FEET	EACH	SQ FT	FT	CU YD	STATION	FEET	FEET	EACH	EACH	EACH	FEET	FEET	EACH	SQ FT	SQ FT	SQ FT	EACH	FT	EACH	EACH	
	ASD-302-1.53	01/STR/PV	87.50					1				0.88	87.50						1									
	ASD-302-2.48	01/STR/PV	12.50									0.13	12.50															
	ASD-302-5.63	01/STR/PV	87.50			1		2			6.0	0.98	87.50			1				2								
	ASD-302-7.96	01/STR/PV					12.50					0.13					12.50											
	ASD-302-9.34	01/STR/PV	87.50			2		1				1.13	87.50			2				1								
<b>TOTAL CARRIED TO GENERAL SUMMARY</b>			<b>275.00</b>			<b>3</b>	<b>12.50</b>	<b>4</b>			<b>6</b>	<b>3.25</b>	<b>275.00</b>			<b>3</b>	<b>12.50</b>		<b>4</b>				<b>8</b>					



LOCATION	ITEM	UNIT	QUANTITY			DESCRIPTION
			LEFT	RIGHT	TOTAL	
U	209	STA		0.88	0.88	RESHAPING UNDER GUARDRAIL
F	202	FEET		87.50	87.50	GUARDRAIL REMOVED FOR REUSE
G	606	FEET		87.50	87.50	GUARDRAIL REBUILT, TYPE 5
P	202	EACH		1	1	BRIDGE TERMINAL ASSEMBLY REMOVED FOR REUSE
Y	606	EACH		1	1	BRIDGE TERMINAL ASSEMBLY REBUILT, TYPE 4
AA	626	EACH		3	3	BARRIER REFLECTOR

**GUARDRAIL AT STR 1.53**

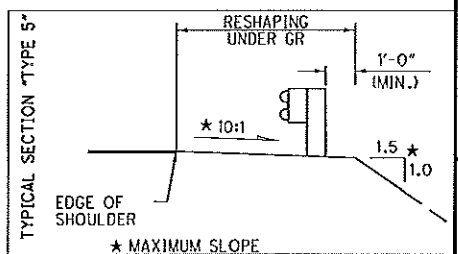
ALL QUANTITIES CARRIED TO THE ROADWAY SUB-SUMMARY.



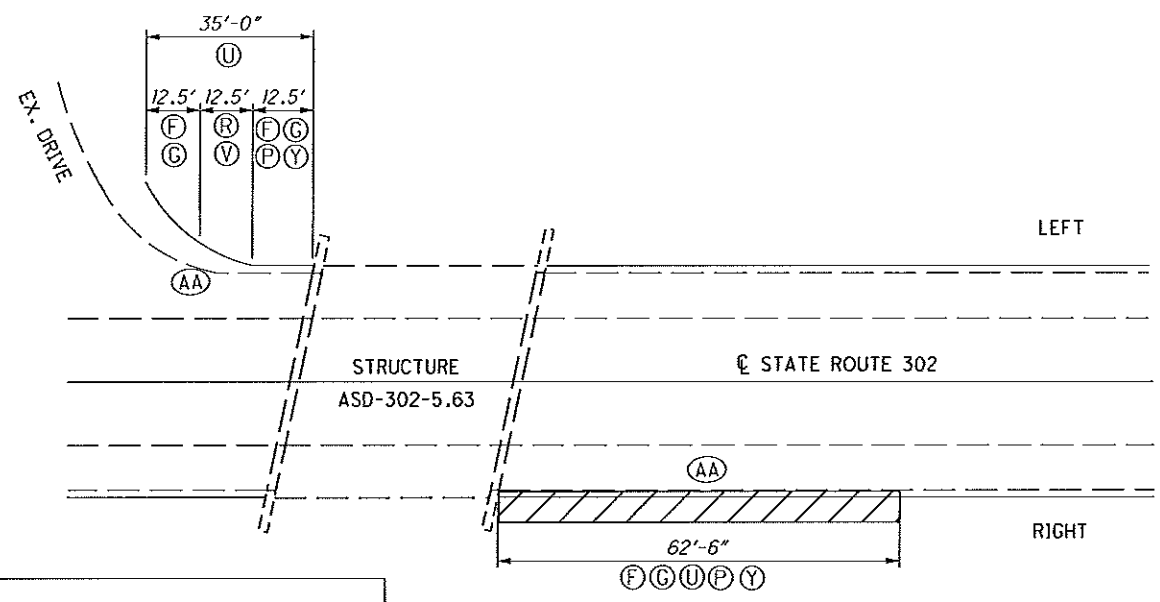
LOCATION	ITEM	UNIT	QUANTITY			DESCRIPTION
			LEFT	RIGHT	TOTAL	
F	202	FEET	12.50		12.50	GUARDRAIL REMOVED FOR REUSE
U	209	STA	0.13		0.13	RESHAPING UNDER GUARDRAIL
G	606	FEET	12.50		12.50	GUARDRAIL REBUILT, TYPE 5
AA	626	EACH	1		1	BARRIER REFLECTOR

**GUARDRAIL AT STR 2.48**

ALL QUANTITIES CARRIED TO THE ROADWAY SUB-SUMMARY.



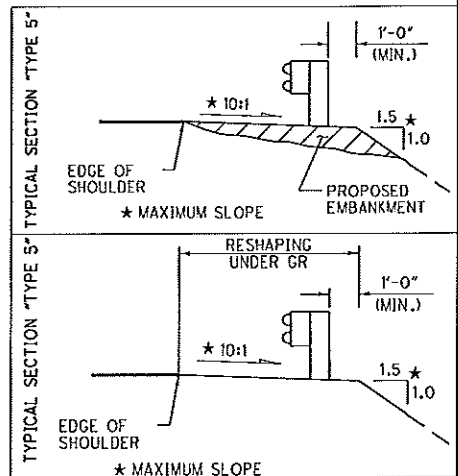
DESIGN FILE: \\projects\94-390\roadway\sheets\94-390GR001.dgn  
WORKSTATION: vanhorn DATE: 8/10/2015 MODELNAME: Design



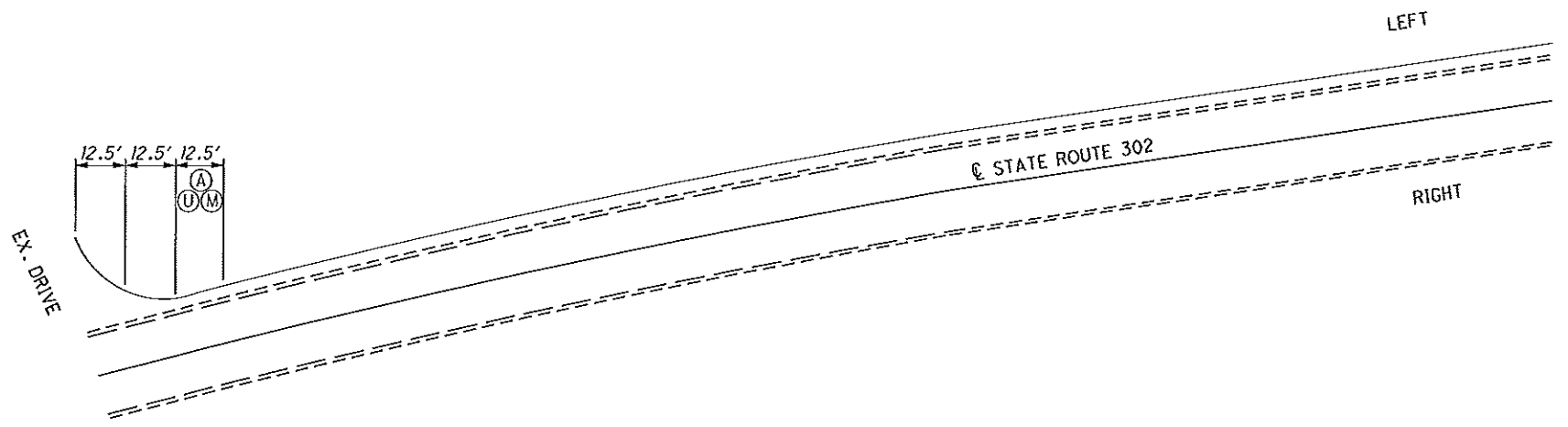
LOCATION	ITEM	UNIT	QUANTITY			DESCRIPTION
			LEFT	RIGHT	TOTAL	
U	209	STA	0.35	0.63	0.98	RESHAPING UNDER GUARDRAIL
F	202	FEET	25.00	62.50	87.50	GUARDRAIL REMOVED FOR REUSE
G	606	FEET	25.00	62.50	87.50	GUARDRAIL REBUILT, TYPE 5
R	202	EACH	1.00		1.00	ANCHOR ASSEMBLY REMOVED, TYPE T
V	606	EACH	1.00		1.00	ANCHOR ASSEMBLY, TYPE T
	203	CU YD		6.00	6.00	EMBANKMENT, AS PER PLAN
P	202	EACH	1.00	1.00	2.00	BRIDGE TERMINAL ASSEMBLY REMOVED FOR REUSE
Y	606	EACH	1.00	1.00	2.00	BRIDGE TERMINAL ASSEMBLY REBUILT, TYPE 4
AA	626	EACH	1.00	1.00	2.00	BARRIER REFLECTOR

ALL QUANTITIES CARRIED TO THE ROADWAY SUB-SUMMARY.

**GUARDRAIL AT STR 5.63**



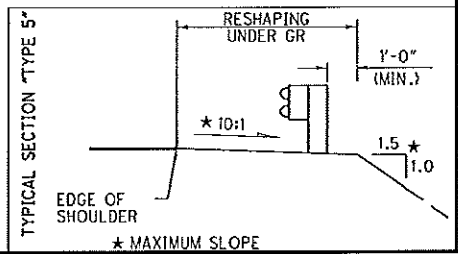
GUARDRAIL DETAILS



LOCATION	ITEM	UNIT	QUANTITY			DESCRIPTION
			LEFT	RIGHT	TOTAL	
A	202	FEET	12.50		12.50	GUARDRAIL REMOVED
U	209	STA	0.13		0.13	RESHAPING UNDER GUARDRAIL
M	606	FEET	12.5		12.5	GUARDRAIL, TYPE 5

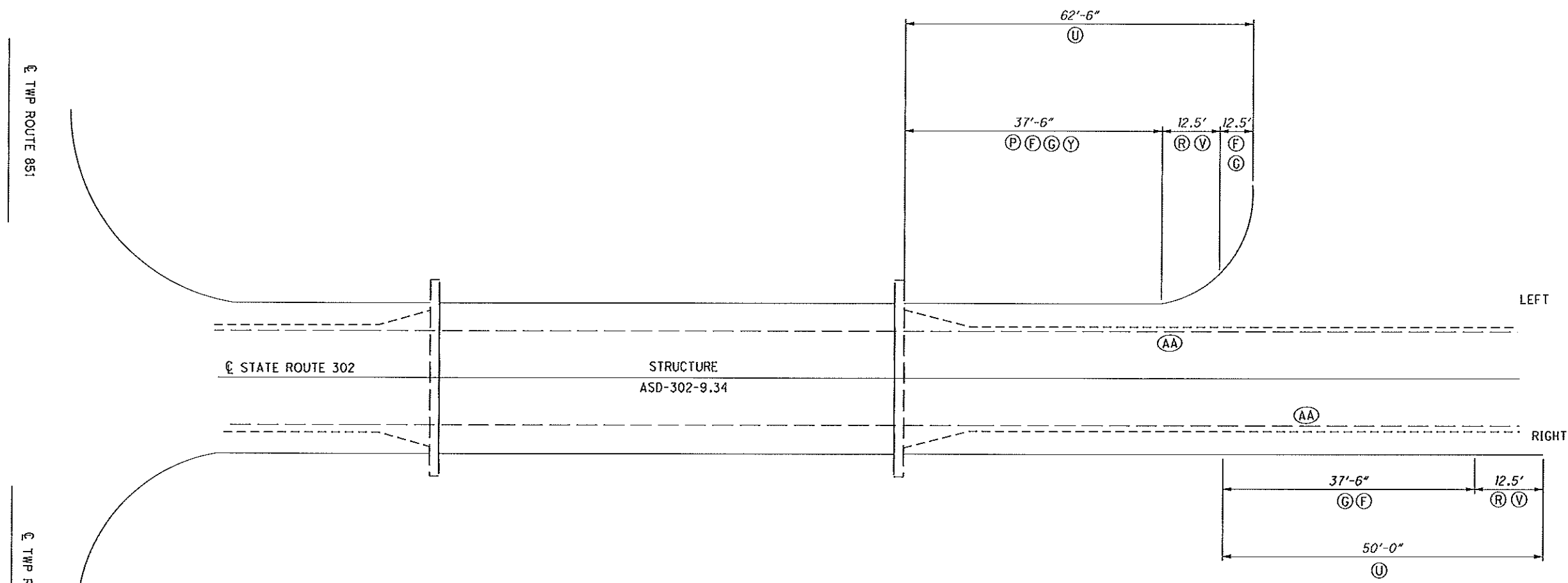
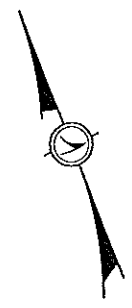
ALL QUANTITIES CARRIED TO THE ROADWAY SUB-SUMMARY.

**GUARDRAIL AT SLM 7.96**



ASD-302-0.00

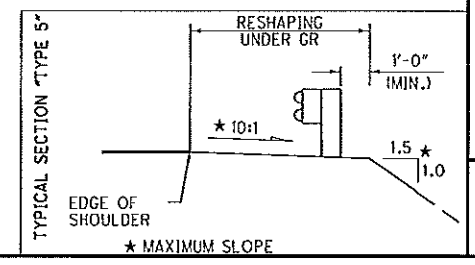
DESIGN FILE: \\projects\94-390\roadway\sheets\94-390GR001.dgn  
WORKSTATION: vanhorn  
MODELNAME: Design  
DATE: 8/10/2015



**GUARDRAIL AT STRUCTURE 9.34**

LOCATION	ITEM	UNIT	QUANTITY			DESCRIPTION
			LEFT	RIGHT	TOTAL	
U	209	STA	0.63	0.50	1.13	RESHAPING UNDER GUARDRAIL
F	202	FEET	50.00	37.50	87.50	GUARDRAIL REMOVED FOR REUSE
G	606	FEET	50.00	37.50	87.50	GUARDRAIL REBUILT, TYPE 5
P	202	EACH	1		1	BRIDGE TERMINAL ASSEMBLY REMOVED FOR REUSE
Y	606	EACH	1		1	BRIDGE TERMINAL ASSEMBLY REBUILT, TYPE 4
R	202	EACH	1	1	2	ANCHOR ASSEMBLY REMOVED, TYPE T
V	606	EACH	1	1	2	ANCHOR ASSEMBLY, TYPE T
AA	626	EACH	1	1	2	BARRIER REFLECTOR

ALL QUANTITIES CARRIED TO THE ROADWAY SUB-SUMMARY.



DESIGN FILE: \\projects\94390\roadway\sheets\94-390GR001.dgn  
 WORKSTATION: vntorn DATE: 8/10/2015 MODELNAME: Design



**AUXILIARY & LONG LINE MARKINGS**

ROUTE	COUNTY	STATION / SLM		HIGHWAY MILES	614				642, TYPE 1				644										646 (740.04)							
		FROM	TO		MILE	WORK ZONE LANE LINE, CLASS I, 642 PAINT	WORK ZONE CENTER LINE, CLASS II, 642 PAINT	WORK ZONE CHANNELIZING LINE, CLASS I, 642 PAINT	WORK ZONE STOP LINE, CLASS I, 642 PAINT	EDGE LINE (6")		CENTER LINE		(740.04)		AUXILIARY MARKINGS (740.04)						EDGE LINE (6")		CENTER LINE						
										TOTAL (PAY QUANTITY) (WHITE)	TOTAL (PAY QUANTITY) (YELLOW)	LANE LINE	SOLID LINE EQUIVALENT	TOTAL (PAY QUANTITY)	STOP LINE	CROSSWALK LINE, AS PER PLAN	STOP LINE	CROSSWALK LINE, AS PER PLAN	CROSSWALK LINE	TRANSVERSE/DIAGONAL LINE (YELLOW)	RAILROAD SYMBOL MARKING	SCHOOL SYMBOL MARKING		PARKING LOT STALL MARKING	LANE ARROW		TOTAL (PAY QUANTITY) (WHITE)	TOTAL (PAY QUANTITY) (YELLOW)	LANE LINE	SOLID LINE EQUIVALENT
72 INCH	96 INCH	LEFT	RIGHT	THROUGH	COMBINATION	MILE	MILE	MILE	MILE	MILE	FT	FT	FT	FT	FT	FT	EACH	EACH	FT	EACH	EACH	MILE	MILE	MILE	MILE	MILE				
01/STR/PV																														
SR 302	ASD	0.00	10.89	10.89		21.78			462	21.78			15.65	10.89			462		120			2								
SR 302	ASD	11.22	14.51	3.29		6.58			56	6.58			4.95	3.29			56													
TOTAL		ADDITIONAL QUANTITY FOR SIDE ROADS				28.36			518	28.36			20.60	14.18			518		120			2								
TOTALS TO GENERAL SUMMARY																														

**RAISED PAVEMENT MARKERS**

ROUTE	COUNTY	STATION/SLM		DETAIL	621	621	PRISMATIC RETRO-REFLECTOR TYPES					REMARKS	DETAIL	DESCRIPTION	
		RAISED PAVEMENT MARKER REMOVED	RPM		ONE-WAY	TWO-WAY									
		EACH	EACH		WHITE	YELLOW / YELLOW	WHITE / RED	YELLOW / RED	BLUE / BLUE						
01/STR/PV															
SR 302	ASD	0.00	2.66	GAP	170	170									CONTINUOUS ROUTE TREATMENT
SR 302	ASD	2.66	3.07	15	51	51									REVERSE CURVE
SR 302	ASD	3.07	3.92	GAP	58	58									CONTINUOUS ROUTE TREATMENT
SR 302	ASD	3.92	4.12	6	27	27	16								STOP APPR. @ US 42 (SOUTH JUNCT.)
SR 302	ASD	4.12	4.32	6	27	27	16								STOP APPR. @ US 42 (NORTH JUNCT.)
SR 302	ASD	4.32	5.09	GAP	56	56									CONTINUOUS ROUTE TREATMENT
SR 302	ASD	5.09	5.49	6	54	54	32								STOP APPROACHES @ SR 89
SR 302	ASD	5.49	8.16	GAP	179	179									CONTINUOUS ROUTE TREATMENT
SR 302	ASD	8.16	8.39	15	30	30									CURVE
SR 302	ASD	8.39	8.65	GAP	16	16									CONTINUOUS ROUTE TREATMENT
SR 302	ASD	8.65	9.09	6	54	54	32								STOP APPROACHES @ SR 58
SR 302	ASD	9.09	10.14	GAP	76	76									CONTINUOUS ROUTE TREATMENT
SR 302	ASD	10.14	10.36	15	23	23									CURVE
SR 302	ASD	10.36	10.70	GAP	23	23									CONTINUOUS ROUTE TREATMENT
SR 302	ASD	10.70	10.90	6	27	27	16								STOP APPROACH @ SR 511/302 (SOUTH JUNCT.)
SR 302	ASD	11.25	11.52	17	34	34	17								STOP APPROACH @ SR 511/302 (NORTH JUNCT.)
SR 302	ASD	11.52	13.10	GAP	113	113									CONTINUOUS ROUTE TREATMENT
SR 302	ASD	13.10	13.32	15	29	29									CURVE
SR 302	ASD	13.32	14.35	GAP	68	68									CONTINUOUS ROUTE TREATMENT
SR 302	ASD	14.35	14.50	6	27	27	16								STOP APPROACHES @ US 250
01/STR/PV TOTAL					516	516									
TOTALS TO GENERAL SUMMARY					542	542									

- 1 MULTILANE UNDIVIDED TYPICAL SPACING
  - 2 TAPERED ACCEL. LANE
  - 3 DECELERATION LANE
  - 4 PARALLEL ACCEL LANE
  - 5 MULTILANE DIVIDED/EXPRESSWAY
  - 6 STOP APPROACH
  - 7 2 LANE APPR. WITH TURN LANE
  - 8 THROUGH APPROACH
  - 9 3 LANE APPR. WITH TURN LANE
  - 10 3 LANE DIVIDED TO 2 LANE TRANSITION
  - 11 3 LANE UNDIVIDED TO 2 LANE TRANSITION
  - 12 TWO LANE NARROW BRIDGE
  - 13 TWO WAY LEFT TURN LANE
  - 14 ONE LANE BRIDGE
  - 15 HORIZONTAL CURVE
  - 16 HORIZONTAL CURVE ALT.
  - 17 STOP APPROACH ALT.
  - 18 FIRE HYDRANT
  - GAP CENTER LINE AT 80 FT. TYP.
- NOTES:  
 1) THRU LANES SHALL BE 11'-0" WIDE IN NON-CURBED SECTIONS AND STRIPED ACCORDING TO CMS 641.08A.  
 2) FOR ALL WORK ZONE MARKINGS, THE 642 PAINT USED SHALL BE TYPE 1.  
 4) STOP LINES & CENTER LINES SHALL BE STRIPED ALONG THE PROPOSED OVERLAY PORTIONS OF THE FOLLOWING SIDE ROADS:  
 TR 13, TR 63, TR 153, CR 175, CR 175A, TR 251, CR 251, TR 1080, USR 42, SR 89, TR 553, CR 601, TR 713A, ASHLAND RAILWAY CROSSING, TR 713, TR 773, TR 783, SR 58, TR 813, TR 851, TR 964, TR 875, SR511 S OVERLAP, SR511 N OVERLAP, TR 876, TR1101, AND USR 250

CALCULATED	MAE	CHECKED	CAD
<b>PAVEMENT MARKING / RPM SUB-SUMMARY</b>			
<b>ASD - 302 - 0.00</b>			
17		42	

DESIGN FILE:\$\$\$\$\$.DGN FILE SPECIFICATIONS\$\$\$\$\$  
 WORKSTATION: \$\$\$\$\$\$ DATE: \$\$\$\$\$\$  
 MODEL NAME: \$\$\$\$\$\$

**ASD-302-0.89 S.F.N. 0305200 (02/STR/BR)**

ITEM	EXTENSION	QUANTITY	UNIT	DESCRIPTION	REFERENCE SHEET
202	38603	187.5	FT	BRIDGE RAILING REMOVED FOR REUSE, AS PER PLAN	22
202	98200	64	FT	REMOVAL MISC.: POLYMER MODIFIED ASPHALT EXPANSION JOINT SYSTEM	22
254	01000	304	SY	PAVEMENT PLANING, ASPHALT CONCRETE	
407	10000	24.3	GALLON	TACK COAT	
442	00201	25.3	CY	ASPHALT CONCRETE SURFACE COURSE, 9.5MM, TYPE A (446), AS PER PLAN	5
846	00100	64	FT	POLYMER MODIFIED ASPHALT EXPANSION JOINT SYSTEM	

**ASD-302-1.53 S.F.N. 0305235 (02/STR/BR)**

ITEM	EXTENSION	QUANTITY	UNIT	DESCRIPTION	REFERENCE SHEET
202	38603	137.5	FT	BRIDGE RAILING REMOVED FOR REUSE, AS PER PLAN	22
202	98200	70	FT	REMOVAL MISC.: POLYMER MODIFIED ASPHALT EXPANSION JOINT SYSTEM	22
254	01000	196	SY	PAVEMENT PLANING, ASPHALT CONCRETE (2.5")	
407	10000	15.7	GALLON	TACK COAT	
442	00201	8.2	CY	ASPHALT CONCRETE SURFACE COURSE, 9.5MM, TYPE A (446), AS PER PLAN (1.5")	5
517	75600	137.5	FT	DEEP BEAM BRIDGE RETROFIT RAILING	23
846	00100	70	FT	POLYMER MODIFIED ASPHALT EXPANSION JOINT SYSTEM	

DESIGN FILE:\$\$\$\$\$.DGN FILE SPECIFICATIONS\$\$\$\$\$  
 WORKSTATION\$TERMINAL\$ DATE:\$\$\$\$\$DATE\$\$\$\$\$  
 MODELNAME:\$MODELNAME\$

DESIGN AGENCY ODOT DISTRICT THREE OFFICE OF PLANNING & ENGINEERING
DATE 08/15
REVIEWED DJV
DRAWN MAE
DESIGNED MAE
CHECKED CAD
REVISOR REVISED
<b>STRUCTURE SUMMARY</b>
<b>ASD-302-0.00</b>
1 / 3
18 42

**ASD-302-2.48 S.F.N. 0305278 (03/IMS/BR)**

ITEM	EXTENSION	QUANTITY	UNIT	DESCRIPTION	REFERENCE SHEET
202	98200	58	FT	REMOVAL MISC.: POLYMER MODIFIED ASPHALT EXPANSION JOINT SYSTEM	22
254	01000	856	SY	PAVEMENT PLANING, ASPHALT CONCRETE	
407	10000	68.5	GALLON	TACK COAT	
442	00201	71.3	CY	ASPHALT CONCRETE SURFACE COURSE, 9.5MM, TYPE A (446), AS PER PLAN	5
517	72750	670	FT	RAILING (THRIE BEAM RETROFIT)	
846	00100	58	FT	POLYMER MODIFIED ASPHALT EXPANSION JOINT SYSTEM	

**ASD-302-5.63 S.F.N. 0305294 (02/STR/BR)**

ITEM	EXTENSION	QUANTITY	UNIT	DESCRIPTION	REFERENCE SHEET
202	38603	87.5	FT	BRIDGE RAILING REMOVED FOR REUSE, AS PER PLAN	22
202	98200	70	FT	REMOVAL MISC.: POLYMER MODIFIED ASPHALT EXPANSION JOINT SYSTEM	22
254	01000	133	SY	PAVEMENT PLANING, ASPHALT CONCRETE (2.5")	
407	10000	10.6	GALLON	TACK COAT	
442	00201	5.5	CY	ASPHALT CONCRETE SURFACE COURSE, 9.5MM, TYPE A (446), AS PER PLAN (1.5")	5
517	76300	87.5	FT	RAILING, MISC.: RAISE EXISTING DEEP BEAM BRIDGE GUARDRAIL	23
846	00100	70	FT	POLYMER MODIFIED ASPHALT EXPANSION JOINT SYSTEM	

DESIGN FILE:\$\$\$\$\$.DGN FILE SPECIFICATIONS\$\$\$\$\$  
 WORKSTATION\$TERMINAL\$ DATE:\$\$\$\$\$DATE\$\$\$\$\$  
 MODEL NAME: \$MODELNAME\$

DESIGN AGENCY  
 ODOT DISTRICT THREE OFFICE  
 OF PLANNING & ENGINEERING

DATE	08/15
REVIEWED	DJV
DRAWN	MAE
DESIGNED	MAE
CHECKED	CAD
REVISED	

**STRUCTURE SUMMARY**

**ASD-302-0.00**

**ASD-302-9.34 S.F.N. 0305340 (02/ STR/ BR)**

ITEM	EXTENSION	QUANTITY	UNIT	DESCRIPTION	REFERENCE SHEET
202	38603	212.5	FT	BRIDGE RAILING REMOVED FOR REUSE, AS PER PLAN	22
202	98200	64	FT	REMOVAL MISC.: POLYMER MODIFIED ASPHALT EXPANSION JOINT SYSTEM	22
254	01000	348	SY	PAVEMENT PLANING, ASPHALT CONCRETE (2.5")	
407	10000	27.8	GALLON	TACK COAT	
409	30001	64	FT	SAWING AND SEALING ASPHALT CONCRETE PAVEMENT JOINTS, AS PER PLAN	23
442	00201	14.5	CY	ASPHALT CONCRETE SURFACE COURSE, 9.5MM, TYPE A (446), AS PER PLAN (1.5")	5
517	76300	212.5	FT	RAILING, MISC.: RAISE EXISTING DEEP BEAM BRIDGE GUARDRAIL	23
846	00100	64	FT	POLYMER MODIFIED ASPHALT EXPANSION JOINT SYSTEM	

**ASD-302-14.39 S.F.N. 0305405 (02/ STR/ BR)**

ITEM	EXTENSION	QUANTITY	UNIT	DESCRIPTION	REFERENCE SHEET
202	11301	4.9	CY	PORTIONS OF STRUCTURE REMOVED, AS PER PLAN	23
202	98200	42	FT	REMOVAL MISC.: JOINT SEALER	22
511	34410	1.8	CY	CLASS QC2 CONCRETE, SUPERSTRUCTURE (REPAIR)	23
511	53012	3.1	CY	CLASS QC2 CONCRETE, MISC.: APPROACH SLAB REPAIR	23
512	10300	193	SY	SEALING OF CONCRETE BRIDGE DECKS WITH HMWM RESIN	
516	31000	42	FT	JOINT SEALER	
614	13202	17	EACH	BARRIER REFLECTOR, TYPE A2	
614	21200	0.19	MILE	WORK ZONE CENTER LINE, CLASS 1, 740.06, TYPE 1 (SOLID DOUBLE)	
614	22200	0.23	MILE	WORK ZONE EDGE LINE, CLASS 1, 740.06, TYPE 1 (WHITE)	
614	26400	20	FT	WORK ZONE STOP LINE, CLASS 1, 740.06, TYPE 1	

DESIGN FILE:\$\$\$\$\$.DGN FILE SPECIFICATIONS\$\$\$\$\$  
 WORKSTATION\$TERMINAL\$ DATE:\$\$\$\$\$DATE\$\$\$\$\$  
 MODELNAME: \$MODEL NAMES

DESIGN AGENCY	ODOT DISTRICT THREE OFFICE OF PLANNING & ENGINEERING
DATE	08/15
REVISION	DJV
DRAWN	MAE
DESIGNED	MAE
CHECKED	CAD
STRUCTURE SUMMARY	
ASD-302-0.00	
3 / 3	20 42

DESIGN FILE:\$\$\$\$\$.DGN FILE SPECIFICATIONS\$\$\$\$\$  
 WORKSTATION:TERMINAL\$ DATE:\$\$\$\$\$DATE\$\$\$\$\$  
 MODEL NAME: \$MODELNAME\$

BRIDGE DECK DATA								ROADWAY DATA		
COUNTY, ROUTE, BRIDGE NO.	LOCATION	STRUCTURE TYPE	LENGTH (BRIDGE DECK)	WIDTH (BRIDGE DECK)	BRIDGE DECK AREA	SKEW	EXISTING WEARING SURFACE	EXISTING PAVEMENT WIDTH	EXISTING APPROACH SLAB WIDTH	EXISTING APPROACH SLAB LENGTH
			FT.	FT.	SQ. YD.			FT.	FT.	FT.
* ASD-302-0.89	OVER MUDDY FORK	SINGLE SPAN PRESTRESSED CONCRETE BOX BEAM	85.0	32.0	302.2	10°	ASPHALT	24.0	32.0	15.0
++ ASD-302-1.19	OVER SMALL CREEK	PIPE ARCH CULVERT				2°	ASPHALT	22.0		
** ASD-302-1.53	OVER RED HAW CREEK	SINGLE SPAN PRESTRESSED CONCRETE BOX BEAM	59.0	30.0	196.7	31°	ASPHALT	22.0	30.0	25.0
*** ASD-302-2.48	OVER IR-71	4-SPAN STEEL BEAM	308.0	31.8	1088.3	31°	ASPHALT	22.0	25.0	25.0
+ ASD-302-5.63	OVER KATATOWA CREEK	SINGLE SPAN PRESTRESSED CONCRETE BOX BEAM	35.0	34.0	132.2	12°	ASPHALT	23.0	34.0	20.0
+++ ASD-302-9.34	OVER ORANGE CREEK	3-SPAN PRESTRESSED CONCRETE BOX BEAM	98.0	32.0	348.4	0°	ASPHALT	24.0	32.0	15.0
++++ ASD-302-14.39	OVER VERMILION RIVER	3-SPAN REINFORCED CONCRETE SLAB	54.0	32.2	193.2	15°	CONCRETE	24.0	20.0	15.0

- \* REMOVE AND REPLACE BRIDGE RAIL THE SAME DAY TO PAVE FULL WIDTH. PLANE AND PAVE THE STRUCTURE SURFACE COURSE ONLY. REMOVE AND REPLACE THE POLYMER MODIFIED JOINTS (SEE STRUCTURE SHEETS FOR STRUCTURE QUANTITIES).
- \*\* REMOVE AND REPLACE THE BRIDGE RAIL THE SAME DAY TO PAVE FULL WIDTH. PROVIDE GUARDRAIL RETROFIT TO MEET HEIGHT REQUIREMENTS. PLANE 2.5" AND PAVE 1.5" TO GET MORE BRIDGE RAIL HEIGHT. REMOVE AND REPLACE THE POLYMER MODIFIED JOINTS (SEE STRUCTURE SHEETS FOR STRUCTURE QUANTITIES).
- \*\*\* PROVIDE INLET MOUNTED BRIDGE RAIL RETROFIT. PLANE AND PAVE THE STRUCTURE SURFACE COURSE ONLY. REMOVE AND REPLACE THE POLYMER MODIFIED JOINTS (SEE STRUCTURE SHEETS FOR STRUCTURE QUANTITIES).
- + REMOVE AND REPLACE THE BRIDGE RAIL THE SAME DAY TO PAVE FULL WIDTH. ADJUST THE BRIDGE RAIL HEIGHT TO MEET HEIGHT REQUIREMENTS. PLANE 2.5" AND PAVE 1.5" TO GET MORE BRIDGE RAIL HEIGHT. REMOVE AND REPLACE THE POLYMER MODIFIED JOINTS (SEE STRUCTURE SHEETS FOR STRUCTURE QUANTITIES).
- ++ PLANE AND PAVE OVER STRUCTURE BASED ON MAIN LINE PAVEMENT TREATMENT. NO STRUCTURE WORK. (SEE ROADWAY PLANS FOR PLANING AND PAVING QUANTITIES).
- +++ REMOVE AND REPLACE THE BRIDGE RAIL THE SAME DAY TO PAVE FULL WIDTH. ADJUST THE BRIDGE RAIL HEIGHT TO MEET HEIGHT REQUIREMENTS. PLANE 2.5" AND PAVE 1.5" TO GET MORE BRIDGE RAIL HEIGHT. REMOVE AND REPLACE THE POLYMER MODIFIED JOINTS & PROVIDE SAWED AND SEALED JOINTS AT THE PIERS (SEE STRUCTURE SHEETS FOR STRUCTURE QUANTITIES).
- ++++ REPAIR APPROACH SLAB FULL WIDTH AT JUNCTION TO DECK. REPAIR DECK END FULL WIDTH AT JUNCTION TO APPROACH SLAB & ADDITIONAL WEARING SURFACE SPOT PATCHING (SEE STRUCTURE SHEETS FOR STRUCTURE QUANTITIES). SEAL THE STRUCTURE DECK WITH HMWM. REMOVE STRIP SEAL AND SEAL JOINT WITH ITEM 516 JOINT SEALER.

DESIGN AGENCY  
 ODOT DISTRICT THREE OFFICE  
 OF PLANNING AND ENGINEERING

DATE 8/15  
 REVIEWED DJV  
 DRAIN MAE  
 MAE REVISED  
 DESIGNED MAE  
 CHECKED CAD

STRUCTURE TREATMENT

ASD-302-0.00

**REFERENCES SHALL BE MADE TO SUPPLEMENTAL SPECIFICATIONS**

SUPPLEMENTAL SPECIFICATIONS: 846 DATED 4/17/15

**REFERENCES SHALL BE MADE TO STANDARD BRIDGE DRAWINGS**

STANDARD BRIDGE DRAWINGS:	AS-1-54	DATED 12/1/54
	CSB-1-55	DATED 12/3/56
	DBR-2-73	DATED 7/19/02
	DBR-3-11	DATED 7/15/11
	GSD-1-96	DATED 7/19/02
	TBR-1-11	DATED 1/18/13

**DESIGN SPECIFICATIONS**

DESIGN SPECIFICATIONS: THIS STRUCTURE CONFORMS TO "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 2002, INCLUDING THE 2003-2007 INTERIM SPECIFICATIONS AND THE ODOT BRIDGE DESIGN MANUAL.

**DESIGN DATA**

CONCRETE CLASS QC1 - COMPRESSIVE STRENGTH 4,000 PSI  
 CONCRETE CLASS QC2 - COMPRESSIVE STRENGTH 4,500 PSI  
 REINFORCING STEEL - ASTM A615 OR A998, GRADE 60, MINIMUM YIELD STRENGTH 60,000 PSI  
 STRUCTURAL STEEL - ASTM A709 GRADE 36 - YIELD STRENGTH 36,000 PSI

**EXISTING PLANS**

THE FOLLOWING EXISTING PLANS MAY BE INSPECTED IN THE ODOT DISTRICT 3 OFFICE IN ASHLAND, OHIO.

STRUCTURE #:	PLAN NAME:	DATE:
ASD-302-0089	ASD-302-0.88	2009
ASD-302-0153	ASD-302-1.52	1990
ASD-302-0248	ASD-1-12.38	1957
ASD-302-0563	ASD-302-5.62	1994
ASD-302-0934	ASD-302-9.26	1940
ASD-302-14.39	ASD-302-14.34	1955

**EXISTING STRUCTURE VERIFICATION**

DETAILS AND DIMENSIONS SHOWN ON THESE PLANS PERTAINING TO THE EXISTING STRUCTURES HAVE BEEN OBTAINED FROM PLANS OF THE EXISTING STRUCTURES AND FROM FIELD OBSERVATIONS AND MEASUREMENTS. CONSEQUENTLY, THEY ARE INDICATIVE OF THE EXISTING STRUCTURES AND THE PROPOSED WORK BUT THEY SHALL BE CONSIDERED TENTATIVE AND APPROXIMATE. THE CONTRACTOR IS REFERRED TO CMS SECTIONS 102.05 AND 105.02.

BASE CONTRACT BID PRICES UPON A RECOGNITION OF THE UNCERTAINTIES DESCRIBED ABOVE AND UPON A PREBID EXAMINATION OF THE EXISTING STRUCTURES. HOWEVER, THE DEPARTMENT WILL PAY FOR ALL PROJECT WORK BASED UPON ACTUAL DETAILS AND DIMENSIONS WHICH HAVE BEEN VERIFIED IN THE FIELD.

**PLACING ASPHALT CONCRETE FEATHERING ON APPROACHES TO BRIDGES**

SPECIAL CARE SHALL BE TAKEN, WHEN PLACING THE ASPHALT CONCRETE BUTT JOINT TO EFFECT A SMOOTH TRANSITION FROM THE EXISTING APPROACH PAVEMENT TO THE BRIDGE DECK THE CONTRACTOR'S ATTENTION IS CALLED TO STANDARD DRAWING BP-3.1 FOR REQUIRED TOLERANCES.

**DECK PROTECTION METHOD**

ASPHALT CONCRETE OVERLAY  
SEALING CONCRETE BRIDGE DECKS WITH HMWM RESIN

**IN-STREAM WORK RESTRICTION**

THE CONTRACTOR SHALL TAKE ALL PRECAUTIONS TO AVOID CONSTRUCTION IN AND/OR LIMIT DEMOLITION DEBRIS FROM ENTERING STREAMS OR WETLANDS. ANY MATERIAL THAT DOES FALL INTO STREAMS OR WETLANDS SHALL BE REMOVED AS SOON AS POSSIBLE.

ALL PROJECTS INVOLVING JURISDICTIONAL WATERS OF THE UNITED STATES (STREAMS, RIVERS, NON-ISOLATED WETLANDS) AND/OR ISOLATED WETLANDS ARE SUBJECT TO REGULATION UNDER SECTIONS 404 AND 401 OF THE CLEAN WATER ACT, AND POSSIBLY OHIO EPA ISOLATED WETLAND LAW. IT IS ANTICIPATED THAT NO IN-STREAM WORK, OR WORK UNDER THE STREAM'S ORDINARY HIGH WATER MARK (OHWM) WILL BE NEEDED. THEREFORE NO WATERWAY PERMITS HAVE BEEN GRANTED AND NO IN-STREAM WORK IS ALLOWED.

SHOULD WORK (EITHER TEMPORARY OR PERMANENT) IN THE STREAM BE NEEDED; IT WILL REQUIRE A PERMIT AND AUTHORIZATION BY THE UNITED STATES ARMY CORPS OF ENGINEERS (USACE). THE CONTRACTOR SHALL NOT UTILIZE FILLS BELOW OHWM UNTIL SUCH ACTIVITY IS AUTHORIZED BY THE USACE. DETAILS OF THIS REQUIREMENT ARE DESCRIBED IN ODOT'S SUPPLEMENTAL SPECIFICATION 832.09.

USACE DEFINITION OF OHWM - THE ORDINARY HIGH WATER MARK IS THE LINE ON THE SHORES ESTABLISHED BY THE FLUCTUATIONS OF WATER AND INDICATED BY PHYSICAL CHARACTERISTICS SUCH AS A CLEAR, NATURAL LINE IMPRESSED ON THE BANK; SHELIVING; CHANGES IN THE CHARACTER OF THE SOIL; DESTRUCTION OF TERRESTRIAL VEGETATION; THE PRESENCE OF LITTER AND DEBRIS; OR THE APPROPRIATE MEANS THAT CONSIDER THE CHARACTERISTICS OF THE SURROUNDING AREAS.

**ITEM 202 - BRIDGE RAILING REMOVED FOR REUSE, AS PER PLAN**

THIS ITEM SHALL BE USED TO REMOVE AND REINSTALL THE EXISTING BRIDGE RAILING FOR WORK AT THE STRUCTURE LOCATIONS INDICATED IN THE PLANS IF NECESSARY. BRIDGE RAILING POSTS ARE TO REMAIN IN PLACE. GUARDRAIL MUST BE UP WHEN FLAGGERS ARE NOT PRESENT PER SCD MT-101.90.

PAYMENT FOR ALL OF THE ABOVE SHALL BE AT THE UNIT PRICE BID PER FOOT FOR THE ABOVE ITEM, WHICH WILL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THE ABOVE WORK.

**ITEM 202 - REMOVAL MISC.: POLYMER MODIFIED ASPHALT EXPANSION JOINT SYSTEM**

THIS ITEM SHALL BE USED TO REMOVE THE EXISTING POLYMER MODIFIED JOINT SYSTEM BETWEEN THE BRIDGE DECK AND THE ABUTMENT. SEE ADDITIONAL DETAILS FOR THIS WORK AT THE STRUCTURE LOCATIONS INDICATED IN THE PLANS.

PAYMENT FOR ALL OF THE ABOVE SHALL BE AT THE UNIT PRICE BID PER FOOT FOR THE ABOVE ITEM, WHICH WILL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THE ABOVE WORK.

**ITEM 202 - REMOVAL MISC.: JOINT SEALER**

THIS ITEM SHALL BE USED TO REMOVE THE EXISTING JOINT SEALER LOCATED BETWEEN THE APPROACH SLAB AND THE DECK OR BACKWALL.

PAYMENT FOR ALL OF THE ABOVE SHALL BE AT THE UNIT PRICE BID PER FOOT FOR THE ABOVE ITEM, WHICH WILL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THE ABOVE WORK.

DESIGN FILE:\$\$\$\$\$.DGN FILE SPECIFICATIONS\$\$\$\$\$ WORKSTATION\$TERMINAL\$ DATE:\$\$\$\$\$DATE\$\$\$\$\$ MODEL NAME: \$MODEL NAMES

DESIGN AGENCY  
ODOT DISTRICT THREE OFFICE  
OF PLANNING & ENGINEERING

DATE  
8/15

REVIEWED  
DUV

DRAWN  
MAE

DESIGNED  
MAE

CHECKED  
CAD

STRUCTURE NOTES

ASD-302-0.00

1 / 3

22 / 42

DESIGN FILE:\$\$\$\$\$.DGN FILE SPECIFICATIONS\$\$\$\$\$  
 WORKSTATION\$TERMINAL\$ DATE:\$\$\$\$\$DATE\$\$\$\$\$  
 MODELNAME: \$MODELNAME\$

**ITEM 202 - PORTIONS OF STRUCTURE REMOVED,  
 AS PER PLAN**

THIS ITEM SHALL INCLUDE THE ELEMENTS INDICATED IN THE PLANS AND GENERAL NOTES. ITEMS TO BE REMOVED INCLUDE ALL EXISTING MATERIALS BEING REPLACED BY NEW CONSTRUCTION AND MISCELLANEOUS ITEMS THAT ARE NOT SHOWN TO BE INCORPORATED INTO THE FINAL CONSTRUCTION AND ARE DIRECTED TO BE REMOVED BY THE ENGINEER. THE USE OF EXPLOSIVES, HEADACHE BALLS AND/OR HOE-RAMS WILL NOT BE PERMITTED. THE METHOD OF REMOVAL SHALL BE APPROVED BY THE ENGINEER. PERFORM ALL WORK IN A MANNER THAT WILL NOT CUT, ELONGATE OR DAMAGE THE EXISTING REINFORCING STEEL TO BE PRESERVED. THE WEIGHT OF THE HAMMERS SHALL NOT BE MORE THAN 60 POUNDS. DO NOT PLACE PNEUMATIC HAMMERS IN DIRECT CONTACT WITH REINFORCING STEEL THAT IS TO BE RETAINED IN THE REBUILT STRUCTURE. SUBMIT CONSTRUCTION PLANS ACCORDING TO CMS 501.05.

CUT LINE CONSTRUCTION JOINT PREPARATION: SAW CUT BOUNDARIES OF PROPOSED CONCRETE REMOVALS 1 INCH DEEP. REMOVE CONCRETE TO A ROUGH SURFACE. LEAVE THE EXISTING REINFORCING STEEL, IF REQUIRED IN THE PLANS, IN PLACE. PRIOR TO CONCRETE PLACEMENT, ABRASIVELY CLEAN JOINT SURFACES AND EXISTING EXPOSED REINFORCEMENT TO REMOVE LOOSE AND DISINTEGRATED CONCRETE AND LOOSE RUST. THOROUGHLY CLEAN THE JOINT SURFACE AND EXPOSED REINFORCEMENT OF ALL DIRT, DUST, RUST OR OTHER FOREIGN MATERIAL BY THE USE OF WATER, AIR UNDER PRESSURE, OR OTHER METHODS THAT PRODUCE SATISFACTORY RESULTS. EXISTING REINFORCING STEEL DOES NOT HAVE TO HAVE A BRIGHT STEEL FINISH, BUT REMOVE ALL PACK AND LOOSE RUST. THOROUGHLY DRENCH EXISTING CONCRETE SURFACES WITH CLEAN WATER AND ALLOW TO DRY TO A DAMP CONDITION BEFORE PLACING CONCRETE.

PAYMENT FOR ALL OF THE ABOVE SHALL BE AT THE UNIT PRICE BID PER CUBIC YARD FOR THE ABOVE ITEMS WHICH SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THE ABOVE WORK.

**ITEM 409 - SAWING AND SEALING ASPHALT CONCRETE  
 PAVEMENT JOINTS, AS PER PLAN**

THIS ITEM SHALL BE USED AT LOCATIONS INDICATED IN THE PLAN AND CONSISTS OF SAW CUTTING AND SEALING THE FINISHED SURFACE OF THE ASPHALT CONCRETE PAVEMENT.

PAYMENT FOR ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS, NECESSARY TO COMPLETE THE ABOVE WORK SHALL BE INCLUDED IN THE UNIT PRICE BID PER FOOT FOR THE ABOVE ITEM.

**ITEM 511 - CLASS QC2 CONCRETE, SUPERSTRUCTURE, AS PER PLAN  
 (REPAIR)**

**ITEM 511 - CLASS QC2 CONCRETE, MISC.: APPROACH SLAB REPAIR**

THIS ITEM SHALL BE USED AT LOCATIONS INDICATED IN THE PLAN.

THE CONCRETE SHALL BE CLASS QC2 WITH THE COARSE AGGREGATE BEING LIMESTONE.

ALL EXISTING SURFACES TO WHICH THE CONCRETE IS TO BOND SHALL BE CLEANED BY ABRASIVE BLASTING. THESE SURFACES SHALL BE MADE FREE OF SPALLS, LAITANCE, PAINT, RUST AND OTHER CONTAMINANTS DETRIMENTAL TO ACHIEVING AN ADEQUATE BOND.

PAYMENT FOR ALL OF THE ABOVE SHALL BE AT THE UNIT PRICE BID PER CUBIC YARD FOR THE ABOVE WHICH WILL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THE ABOVE WORK.

**ITEM 517 - DEEP BEAM BRIDGE RETROFIT RAILING, AS PER PLAN**

AFTER THE PLANING & PAVING OPERATIONS ARE COMPLETED OVER THE STRUCTURE, THE GUARDRAIL SHALL BE REINSTALLED. THE REMOVAL AND REPLACEMENT OF THE BRIDGE RAIL SHALL BE PERFORMED IN THE SAME DAY. FOR ADDITIONAL RETROFIT DETAILS, SEE SBD DBR-3-11.

PAYMENT FOR ALL OF THE ABOVE SHALL BE AT THE UNIT PRICE BID PER FOOT FOR ITEM 517 - DEEP BEAM BRIDGE RETROFIT RAILING, AS PER PLAN, WHICH SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS, AND INCIDENTALS NECESSARY TO COMPLETE THE ABOVE WORK.

**ITEM 517 - RAILING, MISC.: RAISE EXISTING DEEP BEAM BRIDGE GUARDRAIL**

THIS ITEM SHALL INCLUDE THE RAISING OF THE EXISTING DEEP BEAM BRIDGE GUARDRAIL ON BOTH SIDES OF THE STRUCTURES ASD-302-5.63 & ASD-302-9.34. THE GUARDRAIL SHALL BE RAISED AS MUCH AS POSSIBLE (1/2"), WHILE STILL USING THE EXISTING POST BOLT HOLES. THE REMOVAL AND REPLACEMENT OF ALL BOLTS AND HARDWARE NECESSARY TO PERFORM THIS WORK SHALL BE INCLUDED IN THIS ITEM.

PAYMENT FOR ALL OF THE ABOVE SHALL BE AT THE UNIT PRICE BID PER FOOT FOR ITEM 517 - RAILING, MISC.: RAISE EXISTING DEEP BEAM BRIDGE GUARDRAIL WHICH SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THE ABOVE WORK.

DESIGN AGENCY  
 ODOT DISTRICT THREE OFFICE  
 OF PLANNING & ENGINEERING

DATE	8/15
REVIEWED	DJV
DRAWN	MAE
DESIGNED	MAE
	CHECKED
	CAD
	REVISED

**STRUCTURE NOTES**

**ASD-302-0.00**

2 / 3  
 23  
 42

**TEMPORARY TRAFFIC SIGNAL ACTIVATION FOR PARTIAL ROADWAY CLOSURE**

THE CONTRACTOR SHALL NOTIFY ODOT DISTRICT 3 PUBLIC INFORMATION OFFICER (PIO) A MINIMUM TEN (10) CALENDAR DAYS ADVANCE NOTICE BEFORE ACTIVATING A TEMPORARY TRAFFIC SIGNAL TO STOP-AND-GO OPERATION FOR PARTIAL ROADWAY CLOSURE.

THE PIO CONTACT INFORMATION IS AS FOLLOWS:

JOYCE MILLER  
 ODOT DISTRICT 3  
 906 CLARK AVENUE  
 ASHLAND, OH 44805  
 PHONE 419-207-7181

ALL COSTS ASSOCIATED WITH THE ABOVE DESCRIBED WORK SHALL BE INCLUDED WITH ITEM 614, MAINTAINING TRAFFIC.

**ITEM 614 - MAINTAINING TRAFFIC FOR STRUCTURE ASD-302-14.39**

TWO WAY TRAFFIC SHALL BE MAINTAINED AT ALL TIMES EXCEPT THAT THROUGH TRAFFIC ON THIS STRUCTURE SHALL HAVE A SIGNALIZED CLOSURE AS SHOWN ON SHEET 25 FOR A MAXIMUM OF 30 CONSECUTIVE CALENDAR DAYS (TOTAL BOTH PHASES). THE 30 CONSECUTIVE DAYS SHALL BE CONSIDERED AS AN INTERIM COMPLETION DATE (SECTION 108) AND FOR EACH CALENDAR DAY BEYOND THE 30 CALENDAR DAYS THAT THE HIGHWAY REMAINS IN A SIGNALIZED CLOSURE, THE CONTRACTOR WILL BE ASSESSED A DISINCENTIVE OF \$1,000 A DAY.

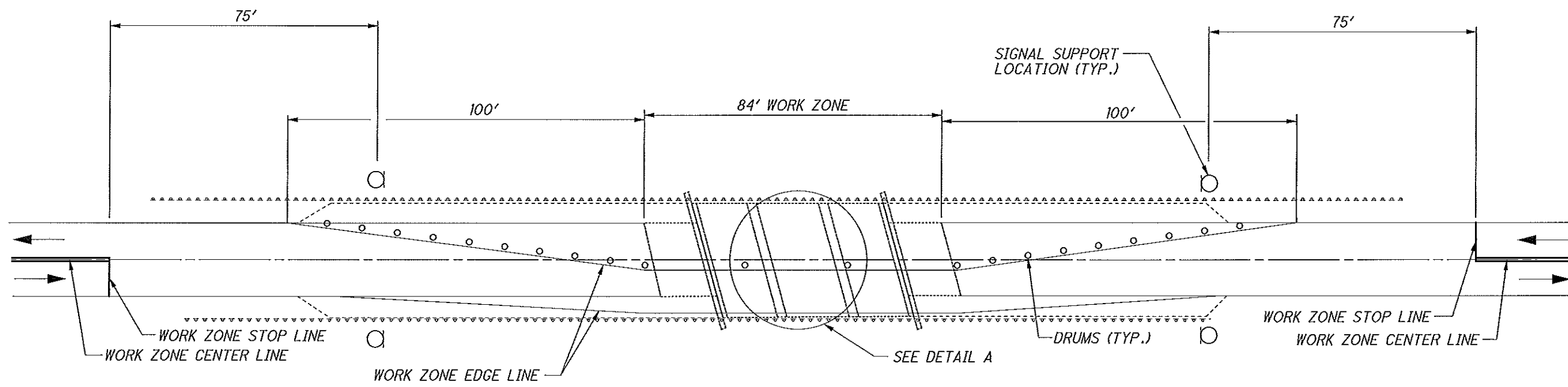
ACCESS TO ADJACENT PROPERTIES SHALL BE MAINTAINED AT ALL TIMES AS PER 614.02 (A).

ALL WORK AND TRAFFIC CONTROL DEVICES SHALL BE IN ACCORDANCE WITH CMS 614 AND OTHER APPLICABLE PORTIONS OF THE SPECIFICATIONS, AS WELL AS THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES. PAYMENT FOR ALL LABOR, EQUIPMENT AND MATERIALS SHALL BE INCLUDED IN THE LUMP SUM CONTRACT PRICE FOR 614, MAINTAINING TRAFFIC, UNLESS SEPARATELY ITEMIZED IN THE PLAN.

DESIGN FILE:\$\$\$\$\$.DGN FILE SPECIFICATIONS\$\$\$\$\$  
 WORKSTATION\$TERMINAL\$ DATE:\$\$\$\$\$DATE\$\$\$\$\$  
 MODELNAME:\$MODELNAME\$

DESIGN AGENCY ODOT DISTRICT THREE OFFICE OF PLANNING & ENGINEERING	DATE 8/15	REVIEWED DJV	DRAWN MAE	DESIGNED MAE		
			REVISED	CHECKED CAD		
<b>STRUCTURE NOTES</b>						
<b>ASD-302-0.00</b>						
3 / 3						
<table border="1" style="margin: auto;"> <tr> <td style="text-align: center;">24</td> </tr> <tr> <td style="text-align: center;">42</td> </tr> </table>					24	42
24						
42						





PHASE A SHOWN  
PHASE B SIMILAR

### SIGNAL TIMING

A TWO PHASE CONTROLLER WITH CABINET CAPABLE OF BEING SET WITH THE FOLLOWING SPLITS SHALL BE FURNISHED

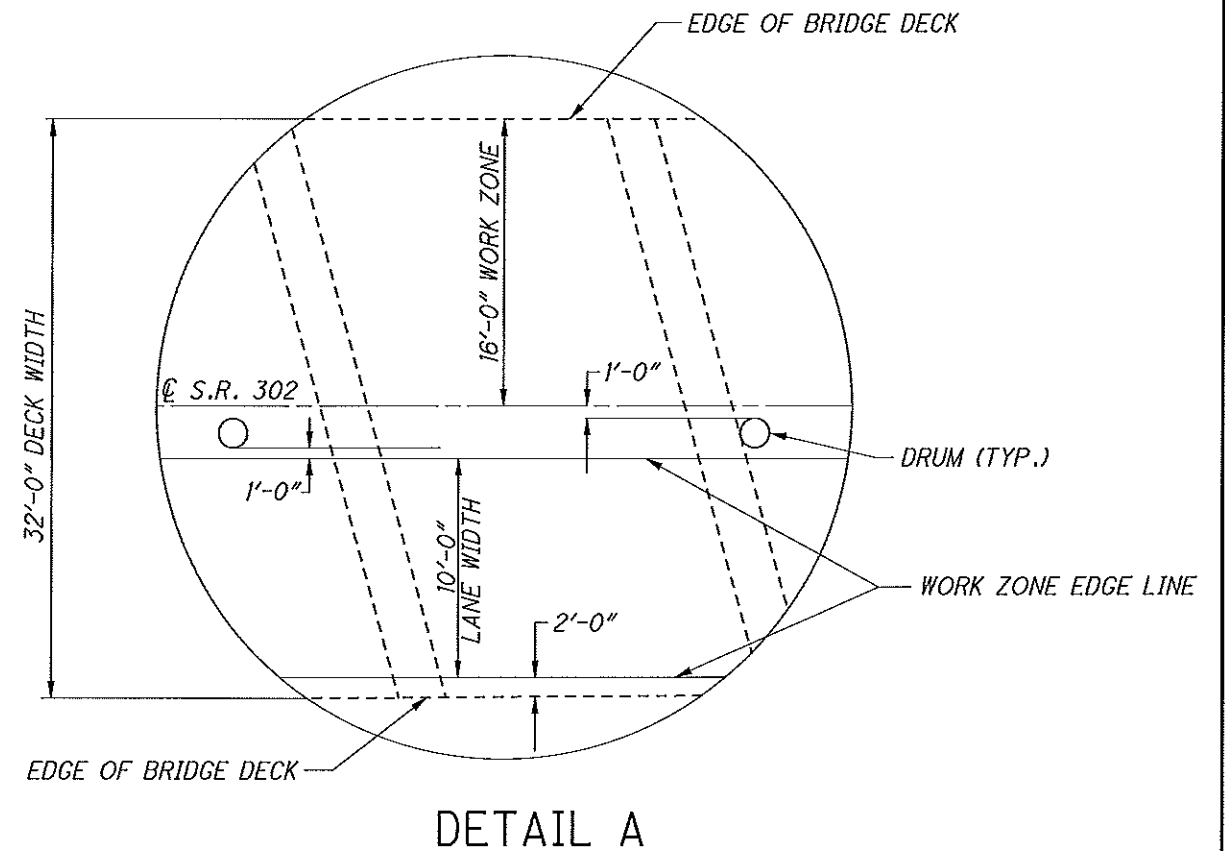
CYCLE LENGTH: 60 SECONDS

	GREEN	AMBER	RED
PHASE A	15	5	10
PHASE B	15	5	10

THE ABOVE TIMING MAYBE CHANGED WITH THE APPROVAL OF THE ENGINEER

ITEM	QUANTITY	UNIT	DESCRIPTION
614	20	FT	WORK ZONE STOP LINE, CLASS 1, 740.06, TYPE I
614	17	EACH	BARRIER REFLECTOR, TYPE A2
614	0.19	MILE	WORK ZONE CENTER LINE, CLASS 1, 740.06, TYPE I (SOLID DOUBLE)
614	0.23	MILE	WORK ZONE EDGE LINE, CLASS 1, 740.06, TYPE I (WHITE)

ALL QUANTITIES CARRIED TO STRUCTURE SUMMARY SHEET



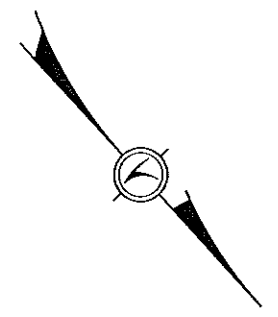
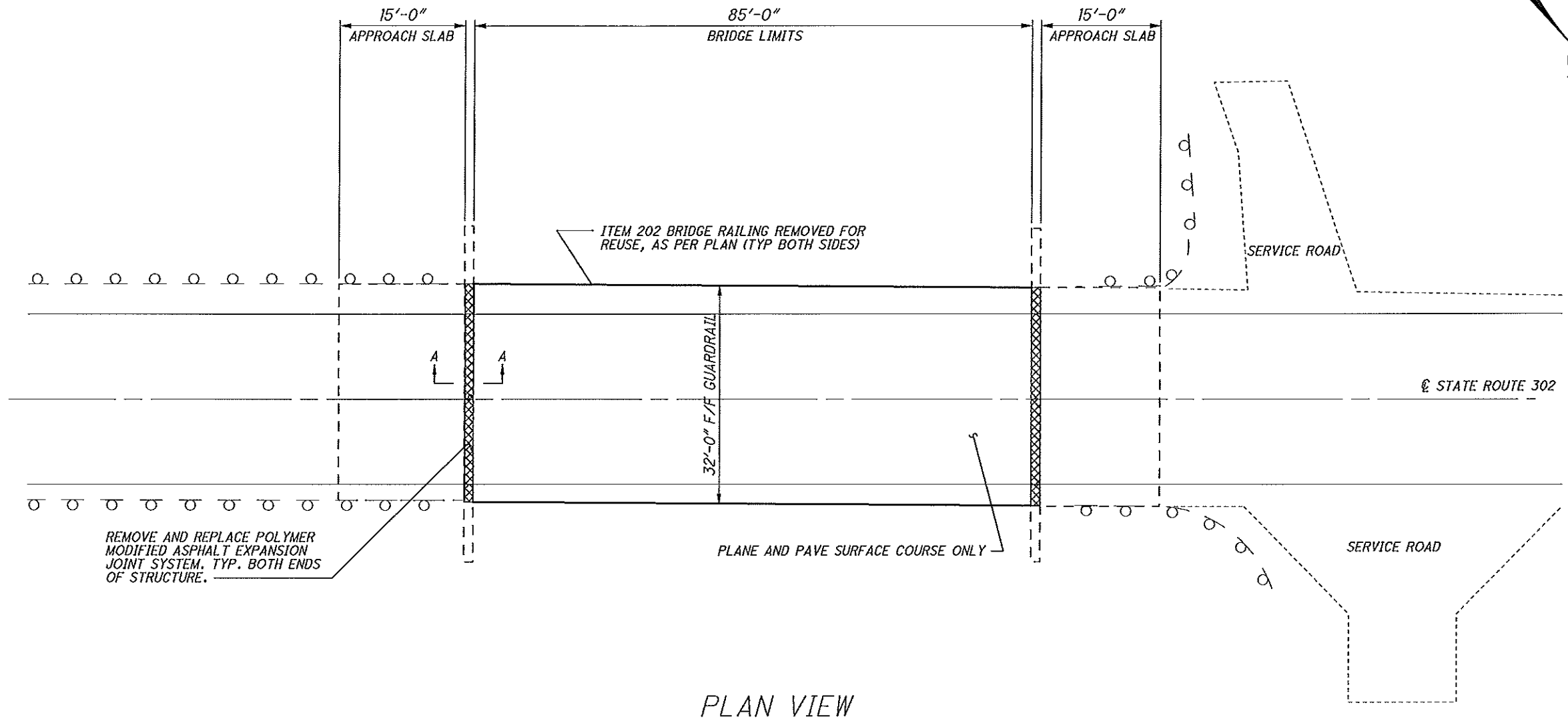
DETAIL A

NOTES:

- 1) THE EXISTING BRIDGE RAILING IS NOT SHOWN IN THE PLAN VIEW.
- 2) FOR ADDITIONAL DETAILS, SEE SCDS MT-96.11, MT-96.20, MT-96.26 AND ALSO SUPPLEMENTAL SPECIFICATIONS 961.

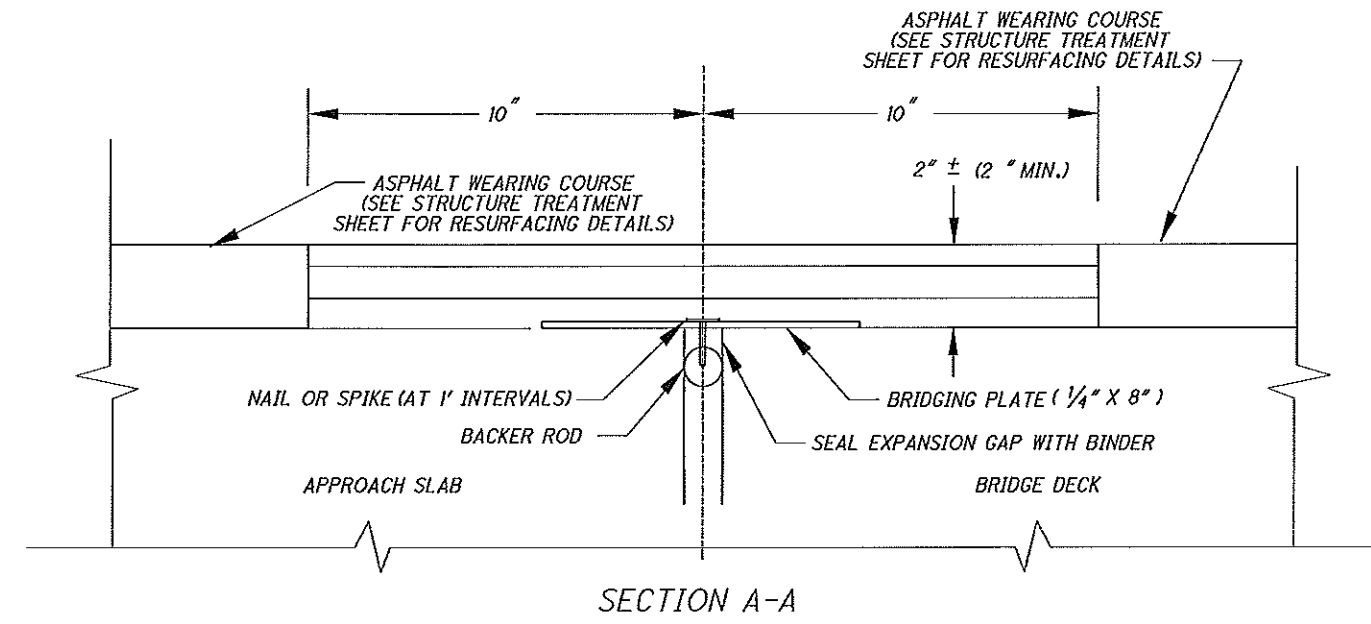
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WORKSTATION:TERMINAL\$ DATE:\$\$\$\$\$DATE\$\$\$\$\$  
MODELNAME:SMODELNAME\$

DESIGN AGENCY: ODOT DISTRICT THREE OFFICE OF PLANNING & ENGINEERING  
 DATE: 08/15  
 REVIEWED: DJV  
 DRAWN: MAE  
 DESIGNED: MAE  
 CHECKED: CAD  
 STRUCTURAL FILE NUMBER: 0305405  
 MAINTENANCE OF TRAFFIC  
 ASD-302-14.39  
 OVER VERMILION RIVER  
 ASD-302-0.00  
 1/1  
 25  
 42



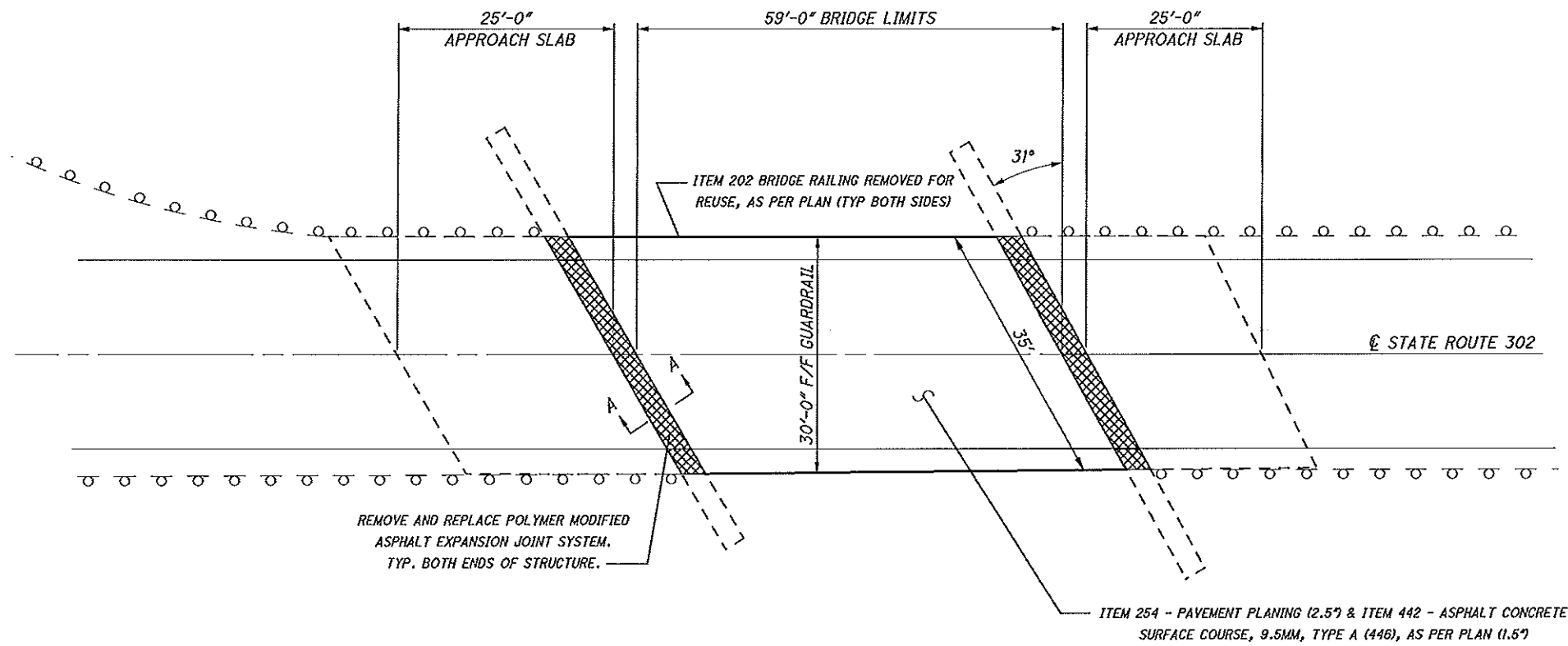
ITEM	QUANTITY	UNIT	DESCRIPTION
202	187.5	FT	BRIDGE RAILING REMOVED FOR REUSE, AS PER PLAN
202	64	FT	REMOVAL MISC.: POLYMER MODIFIED ASPHALT EXPANSION JOINT SYSTEM
254	304	SY	PAVEMENT PLANING, ASPHALT CONCRETE
407	24.3	GALLON	TACK COAT
442	25.3	CY	ASPHALT CONCRETE SURFACE COURSE, 9.5MM, TYPE A (446), AS PER PLAN
846	64	FT	POLYMER MODIFIED ASPHALT EXPANSION JOINT SYSTEM

ALL QUANTITIES CARRIED TO THE STRUCTURE SUMMARY.

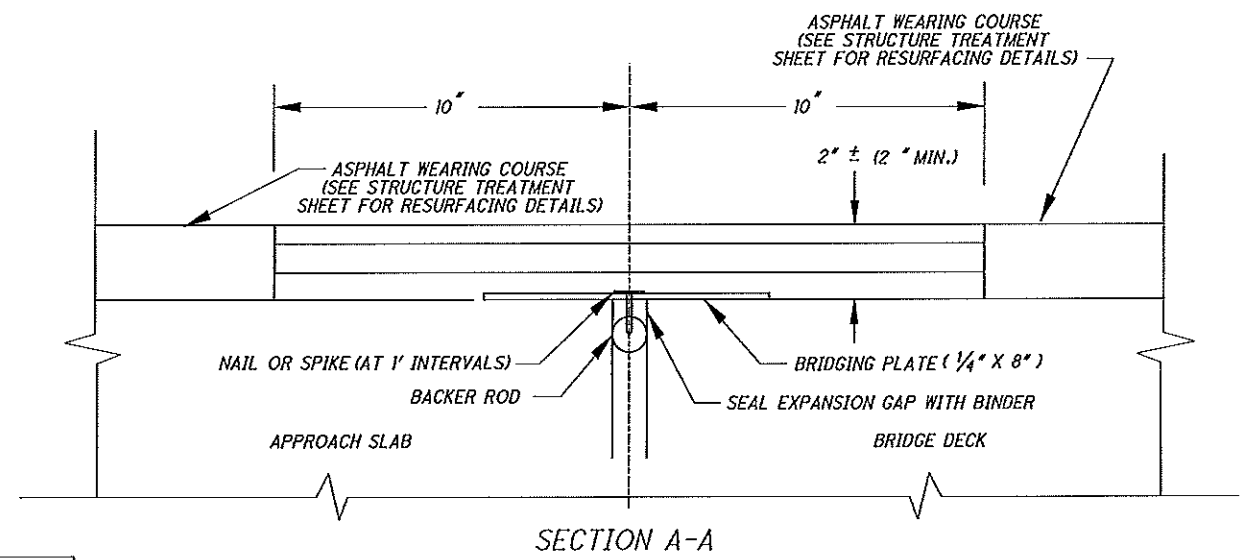


DESIGN AGENCY ODOT DISTRICT THREE OFFICE OF PLANNING & ENGINEERING	DATE 08/15	REVIEWED DUV	STRUCTURE FILE NUMBER 0305200
DESIGNED MAE	CHECKED CAD	DRAWN MAE	REVISED
STRUCTURE DETAILS ASD-302-0.89 OVER MUDDY FORK			
<b>ASD-302-0.00</b>			
1 / 1			
26 42			

DESIGN FILE:\$\$\$\$\$.DGN FILE SPECIFICATIONS\$\$\$\$\$  
 WORKSTATION\$TERMINAL\$ DATE:\$\$\$\$\$DATE\$\$\$\$\$  
 MODELNAME: \$MODELNAME\$



PLAN VIEW

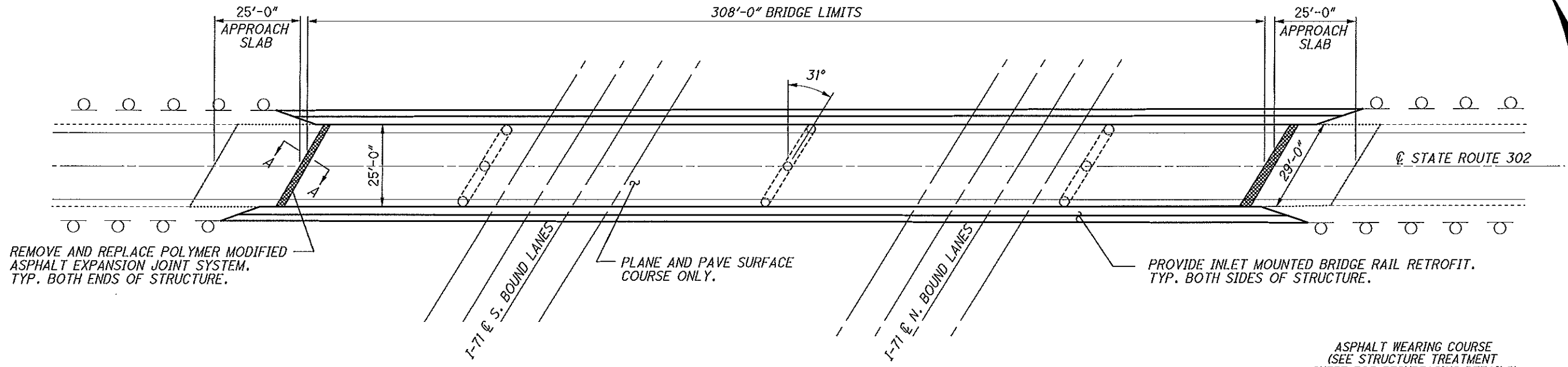
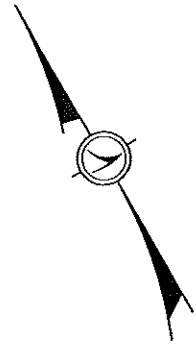


SECTION A-A

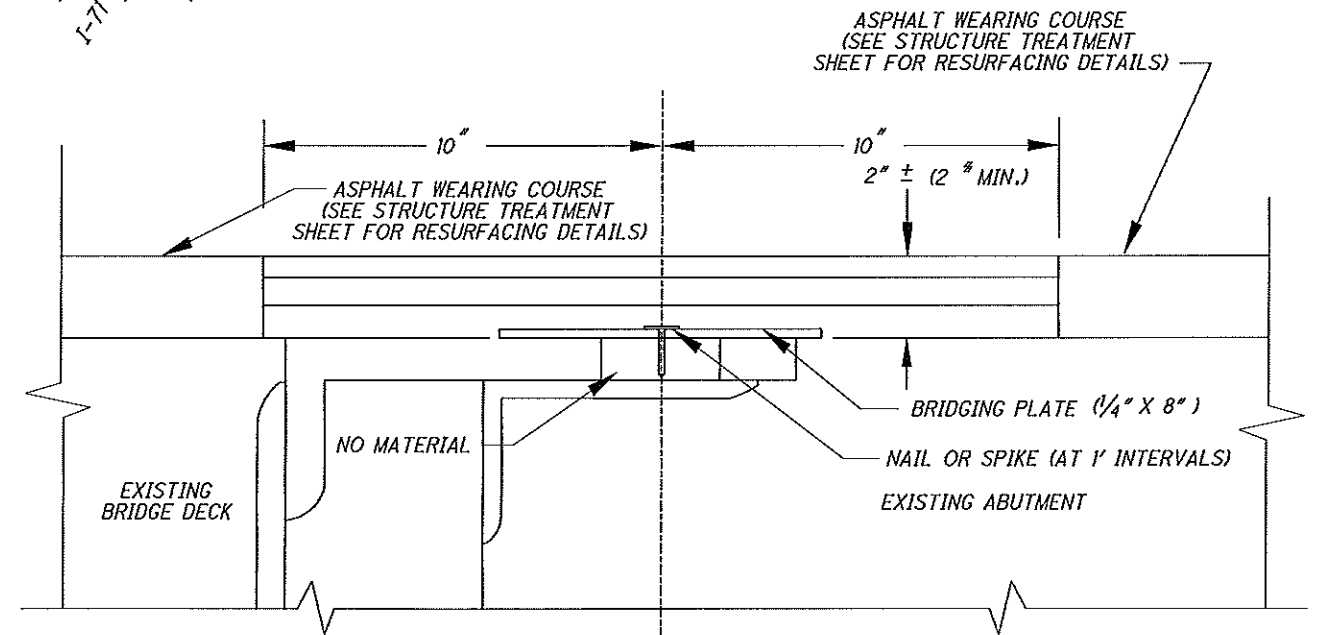
ITEM	QUANTITY	UNIT	DESCRIPTION
202	137.5	FT	BRIDGE RAILING REMOVED FOR REUSE, AS PER PLAN
202	70	FT	REMOVAL MISC.: POLYMER MODIFIED ASPHALT EXPANSION JOINT SYSTEM
254	196	SY	PAVEMENT PLANING, ASPHALT CONCRETE (2.5")
407	15.7	GALLON	TACK COAT
442	8.2	CY	ASPHALT CONCRETE SURFACE COURSE, 9.5MM, TYPE A (446), AS PER PLAN (1.5")
517	137.5	FT	DEEP BEAM BRIDGE RETROFIT RAILING
846	70	FT	POLYMER MODIFIED ASPHALT EXPANSION JOINT SYSTEM

ALL QUANTITIES CARRIED TO THE STRUCTURE SUMMARY.

DESIGN AGENCY: ODOT DISTRICT THREE OFFICE OF PLANNING & ENGINEERING  
 DATE: 08/15  
 REVIEWED: DJV  
 STRUCTURE FILE NUMBER: 0305235  
 DESIGNER: MAE  
 CHECKED: CAD  
 STRUCTURE DETAILS  
 ASD-302-1.53  
 OVER RED HAW CREEK  
 ASD-302-0.00  
 1/1  
 27/42



PLAN VIEW



SECTION A-A

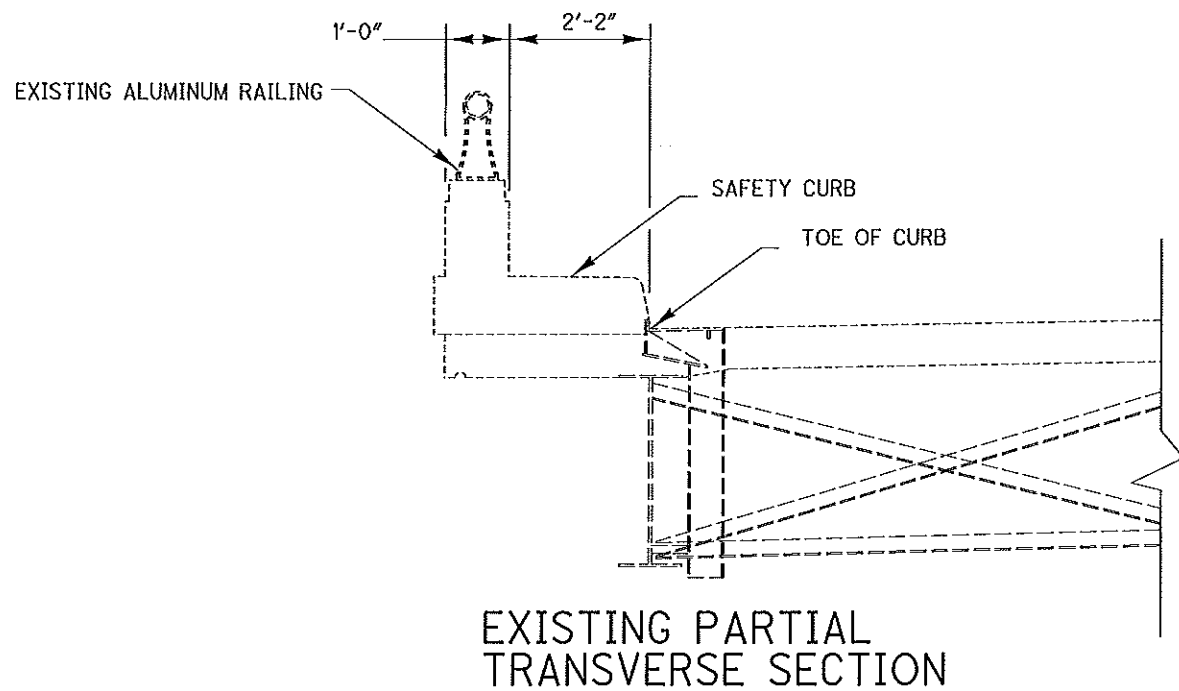
ITEM	QUANTITY	UNIT	DESCRIPTION
202	58	FT	REMOVAL MISC.: POLYMER MODIFIED ASPHALT EXPANSION JOINT SYSTEM
254	856	SY	PAVEMENT PLANING, ASPHALT CONCRETE
407	68.5	GALLON	TACK COAT
442	71.3	CY	ASPHALT CONCRETE SURFACE COURSE, 9.5MM, TYPE A (446), AS PER PLAN
517	670	FT	RAILING (THRIE BEAM RETROFIT)
846	58	FT	POLYMER MODIFIED ASPHALT EXPANSION JOINT SYSTEM

ALL QUANTITIES CARRIED TO THE STRUCTURE SUMMARY.

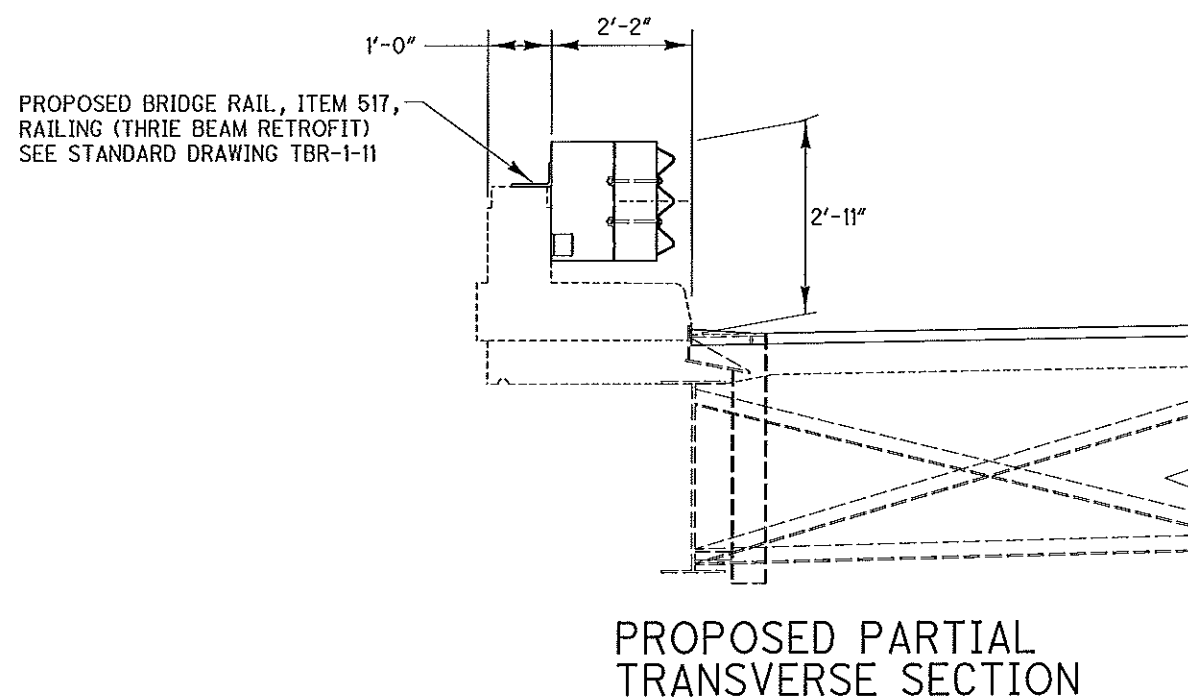
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 WORKSTATION\$TERMINAL\$ DATE:\$\$\$\$\$DATE\$\$\$\$\$  
 MODELNAME: \$MODELNAME\$

DESIGN FILE:\$\$\$\$\$.DGN FILE SPECIFICATIONS\$\$\$\$\$  
 WORKSTATION\$TERMINAL\$ DATE:\$\$\$\$\$DATE\$\$\$\$\$

MODELNAME: \$MODELNAME\$



EXISTING PARTIAL TRANSVERSE SECTION



PROPOSED PARTIAL TRANSVERSE SECTION

NOTES:

- 1) THE ALUMINUM RAILING REMOVED AND THRIE BEAM RAILING INSTALLED AS PER DETAILS AND NOTES ON STANDARD DRAWING TBR-1-11.

ITEM	QUANTITY	UNIT	DESCRIPTION
517	670	FT	RAILING (THRIE BEAM RETROFIT)

QUANTITIES CARRIED TO SHEET 1/2.

DESIGN AGENCY  
 ODOT DISTRICT THREE  
 OFFICE OF PLANNING  
 AND ENGINEERING

DATE  
 08/15

DESIGNED  
 MAE  
 CHECKED  
 CAD

DRAWN  
 MAE  
 REVISIONS

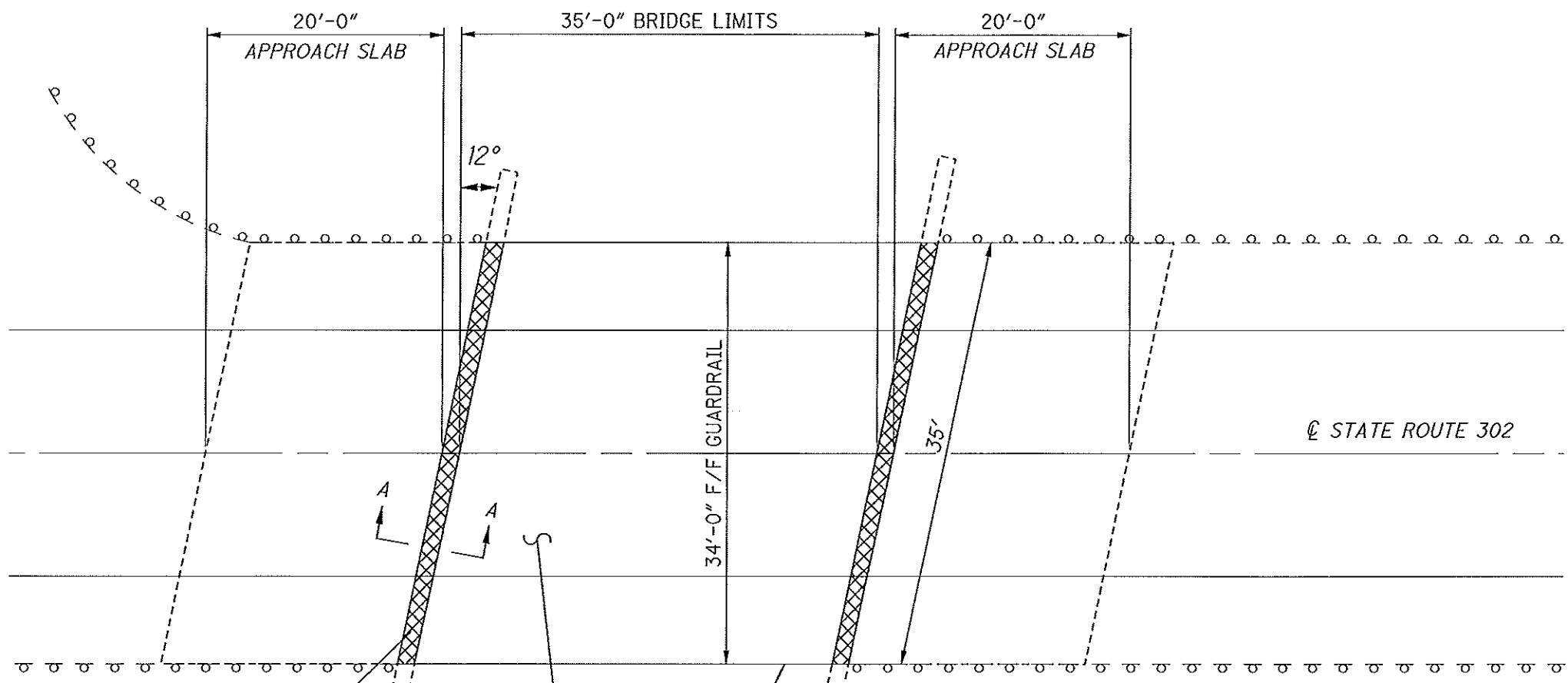
BRIDGE RAIL DETAILS  
 ASD-302-2.48  
 OVER 1-71

REVIEWED  
 D.J.V.  
 STRUCTURE FILE NUMBER  
 0309278

ASD - 302 - 0.00

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29  
 42

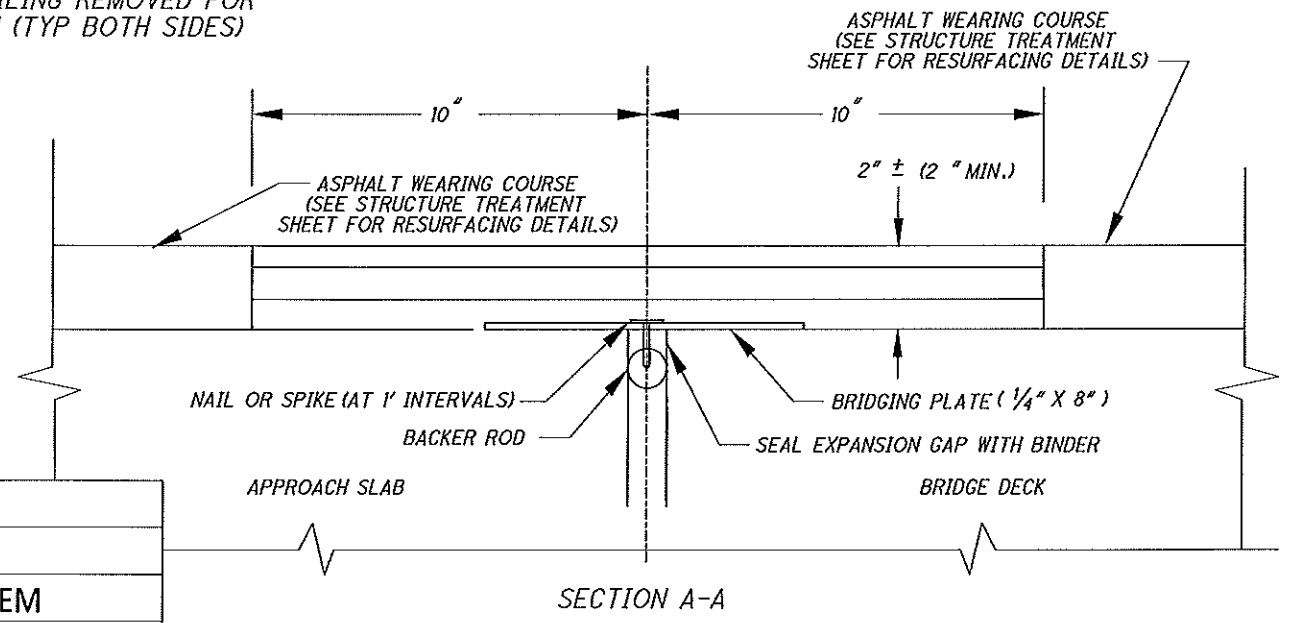


REMOVE AND REPLACE POLYMER MODIFIED ASPHALT EXPANSION JOINT SYSTEM. TYP. BOTH ENDS OF STRUCTURE.

ITEM 202 BRIDGE RAILING REMOVED FOR REUSE, AS PER PLAN (TYP BOTH SIDES)

ITEM 254 - PAVEMENT PLANING (2.5") & ITEM 442 - ASPHALT CONCRETE SURFACE COURSE, 9.5MM, TYPE A (446), AS PER PLAN (1.5")

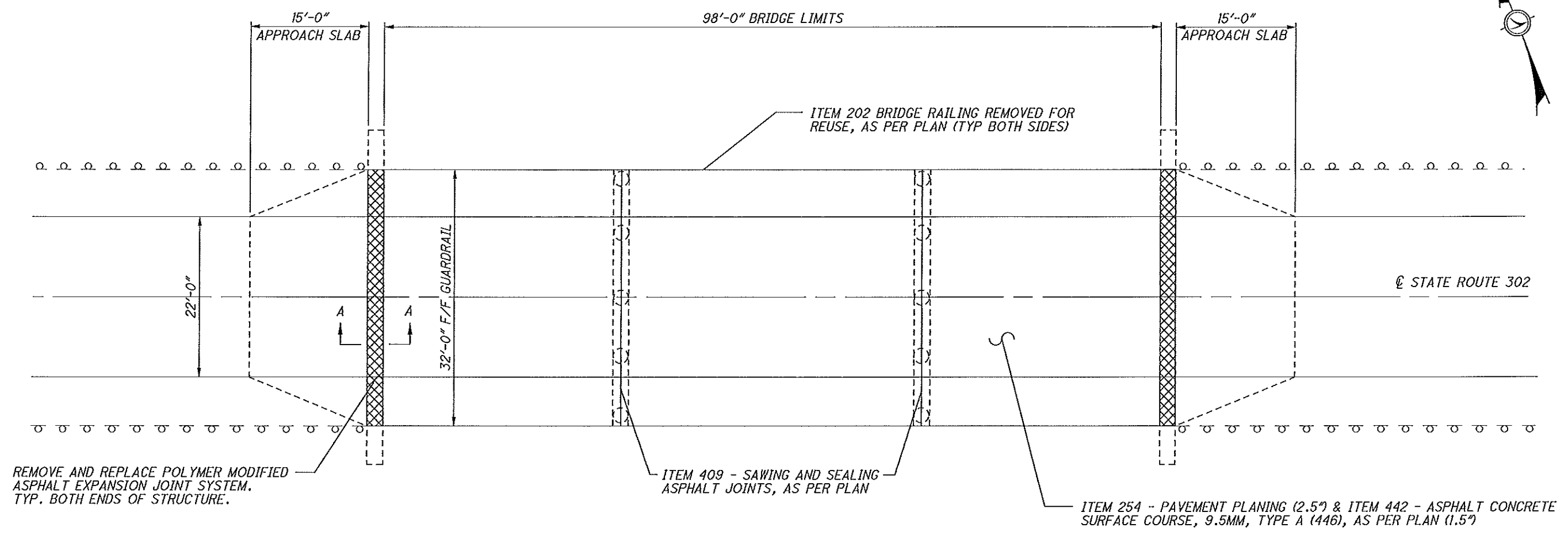
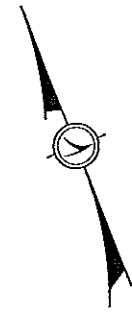
PLAN VIEW



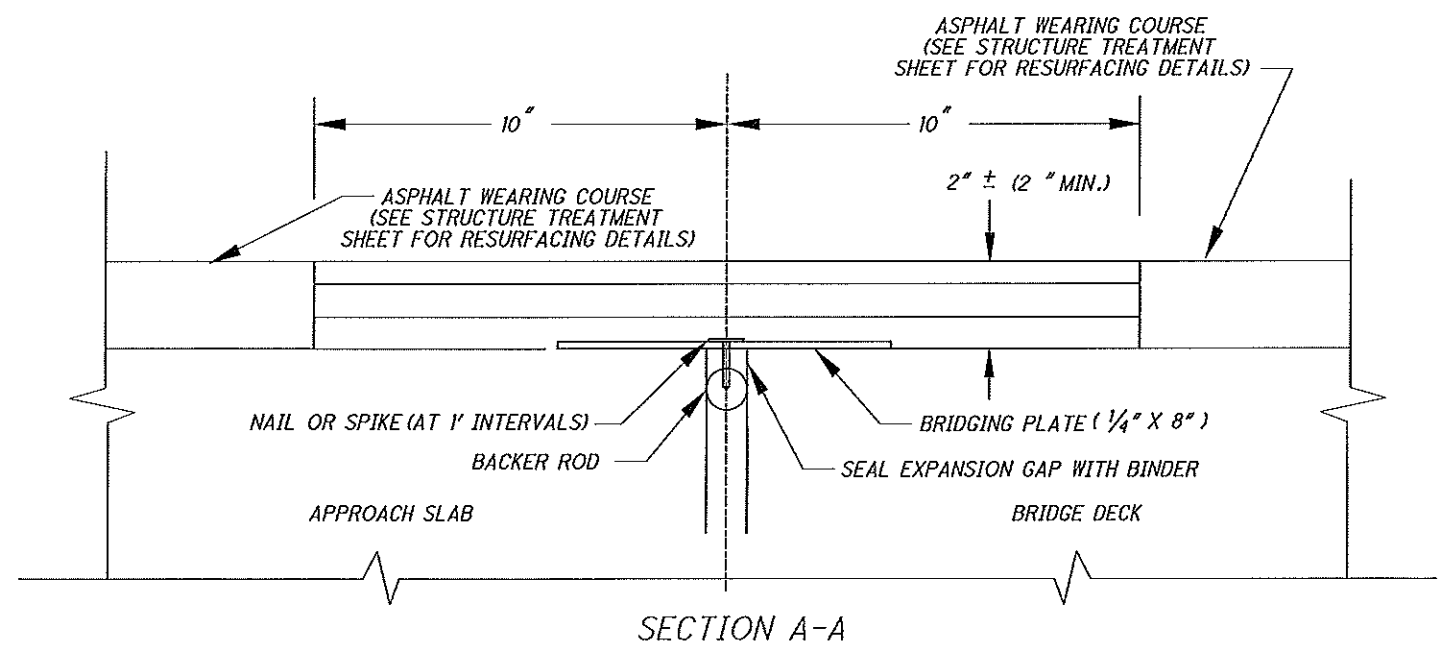
SECTION A-A

ITEM	QUANTITY	UNIT	DESCRIPTION
202	87.5	FT	BRIDGE RAILING REMOVED FOR REUSE, AS PER PLAN
202	70	FT	REMOVAL MISC.: POLYMER MODIFIED ASPHALT EXPANSION JOINT SYSTEM
254	133	SY	PAVEMENT PLANING, ASPHALT CONCRETE (2.5")
407	10.6	GALLON	TACK COAT
442	5.5	CY	ASPHALT CONCRETE SURFACE COURSE, 9.5MM, TYPE A (446), AS PER PLAN (1.5")
517	87.5	FT	RAILING, MISC.: RAISE EXISTING DEEP BEAM BRIDGE GUARDRAIL
846	70	FT	POLYMER MODIFIED ASPHALT EXPANSION JOINT SYSTEM

ALL QUANTITIES CARRIED TO THE STRUCTURE SUMMARY.



PLAN VIEW

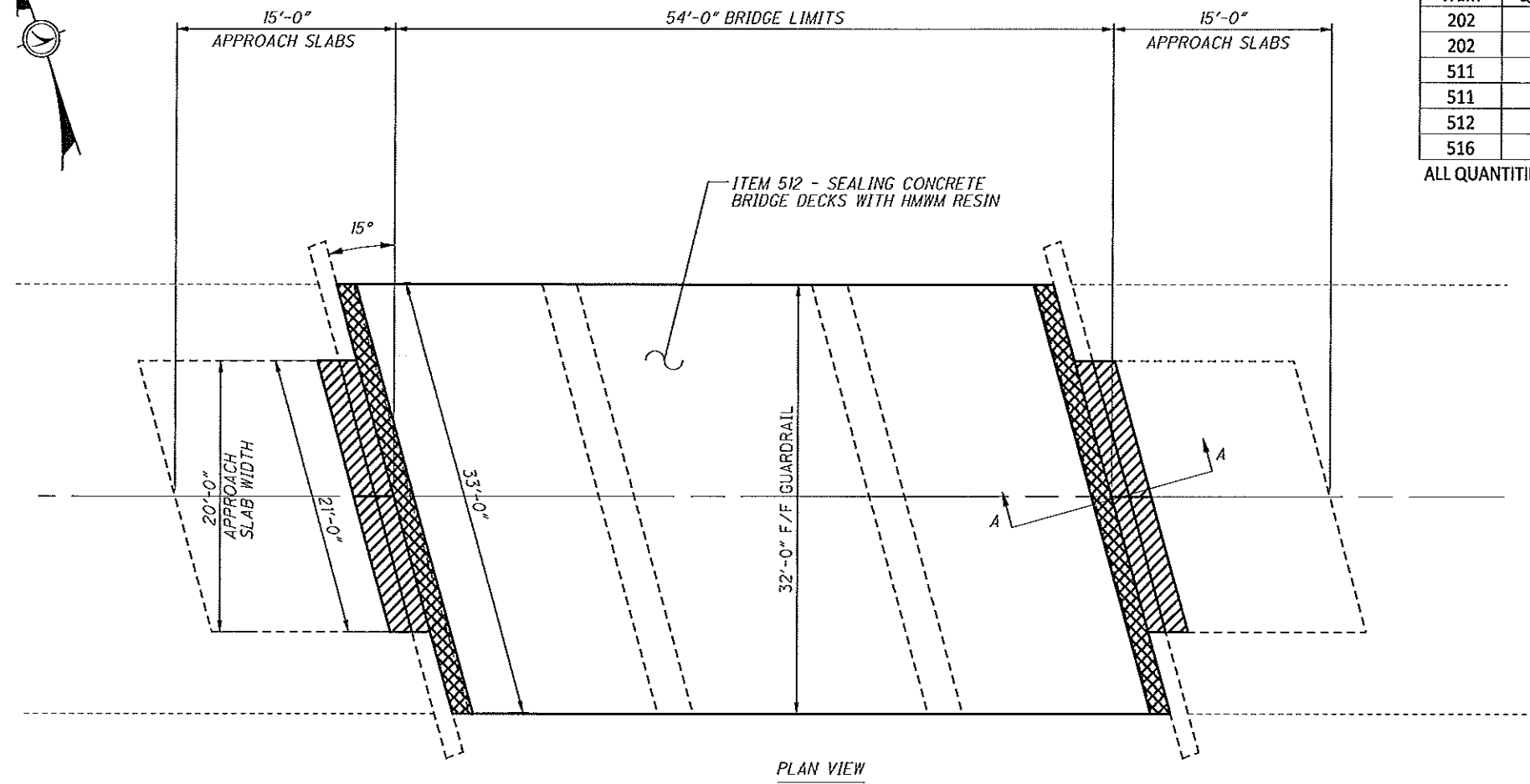
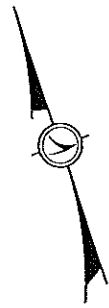


SECTION A-A

ITEM	QUANTITY	UNIT	DESCRIPTION
202	212.5	FT	BRIDGE RAILING REMOVED FOR REUSE, AS PER PLAN
202	64	FT	REMOVAL MISC.: POLYMER MODIFIED ASPHALT EXPANSION JOINT SYSTEM
254	348	SY	PAVEMENT PLANING, ASPHALT CONCRETE (2.5")
407	27.8	GALLON	TACK COAT
409	64	FT	SAWING AND SEALING ASPHALT CONCRETE PAVEMENT JOINTS, AS PER PLAN
442	14.5	CY	ASPHALT CONCRETE SURFACE COURSE, 9.5MM, TYPE A (446), AS PER PLAN (1.5")
517	212.5	FT	RAILING, MISC.: RAISE EXISTING DEEP BEAM BRIDGE GUARDRAIL
846	64	FT	POLYMER MODIFIED ASPHALT EXPANSION JOINT SYSTEM

ALL QUANTITIES CARRIED TO THE STRUCTURE SUMMARY.

DESIGN FILE:\$\$\$\$\$.DGN FILE SPECIFICATIONS\$\$\$\$\$  
 WORKSTATION:TERMINAL\$ DATE:\$\$\$\$\$DATE\$\$\$\$\$  
 MODELNAME: \$MODELNAME\$



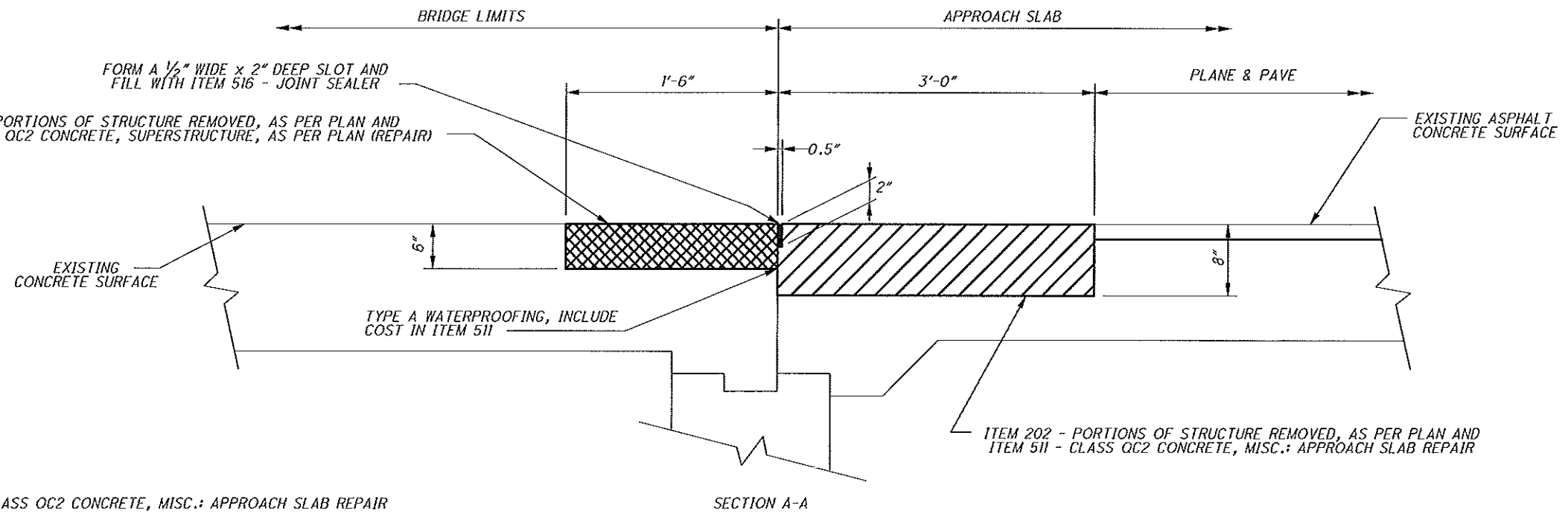
PLAN VIEW

ITEM	QUANTITY	UNIT	DESCRIPTION
202	4.9	CY	PORTIONS OF STRUCTURE REMOVED, AS PER PLAN
202	42	FT	REMOVAL MISC.; JOINT SEALER
511	3.1	CY	CLASS QC2 CONCRETE, MISC.: APPROACH SLAB REPAIR
511	1.8	CY	CLASS QC2 CONCRETE, SUPERSTRUCTURE (REPAIR)
512	193	SY	SEALING OF CONCRETE BRIDGE DECKS WITH HMWM RESIN
516	42	FT	JOINT SEALER

ALL QUANTITIES CARRIED TO THE STRUCTURE SUMMARY.

NOTES:

- EXISTING GUARDRAIL NOT SHOWN IN PLAN VIEW.
- DO NOT DISTURB EXISTING REINFORCING STEEL IN CONCRETE BRIDGE DECK OR APPROACH SLABS.



SECTION A-A

LONGITUDINAL CROSS SECTION DETAIL  
REPAIRS SYMMETRIC ACROSS TRANSVERSE  
CENTERLINE OF STRUCTURE

- ▨ ITEM 511 - CLASS QC2 CONCRETE, MISC.: APPROACH SLAB REPAIR
- ▩ ITEM 511 - CLASS QC2 CONCRETE, SUPERSTRUCTURE, AS PER PLAN

DESIGN FILE:\$\$\$\$\$.DGNFILESPECIFICATIONS\$\$\$\$\$\$  
 WORKSTATIONS\$TERMINAL\$ DATE:\$\$\$\$\$DATE\$\$\$\$\$\$  
 MODELNAME: \$MODELNAME\$

DESIGN AGENCY: ODOT DISTRICT THREE OFFICE OF PLANNING & ENGINEERING  
 DATE: 08/15  
 REVIEWED: DJV  
 STRUCTURE FILE NUMBER: 0305405  
 DRAWN: MAE  
 CHECKED: MAE  
 REVISIONS: \_\_\_\_\_  
 DESIGNED: MAE  
 CHECKED: CAD  
 STRUCTURE DETAILS  
 ASD-302-14.39  
 OVER VERMILION RIVER  
 ASD-302-0.00  
 1/1  
 32/42



**NOTES**

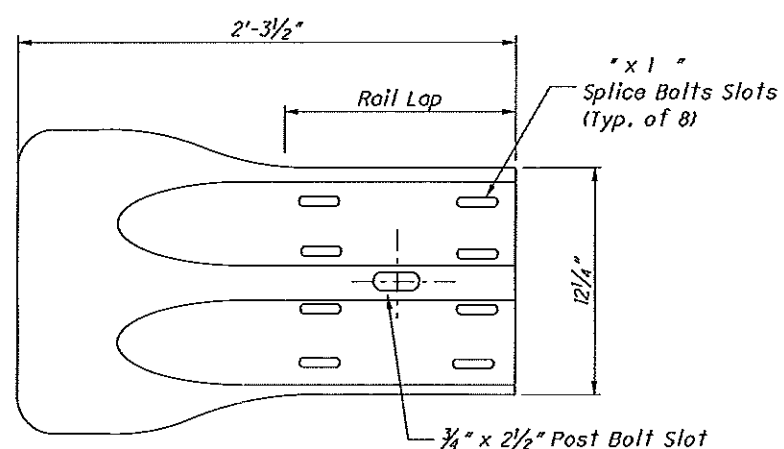
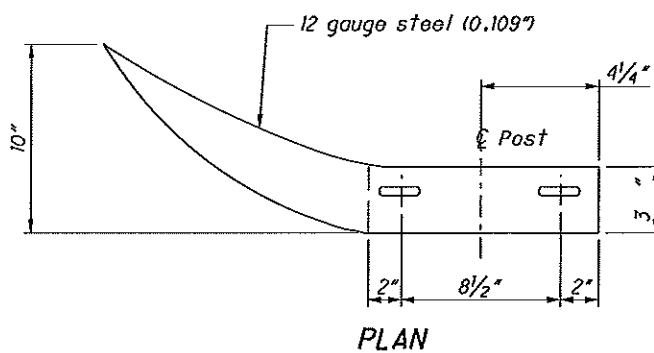
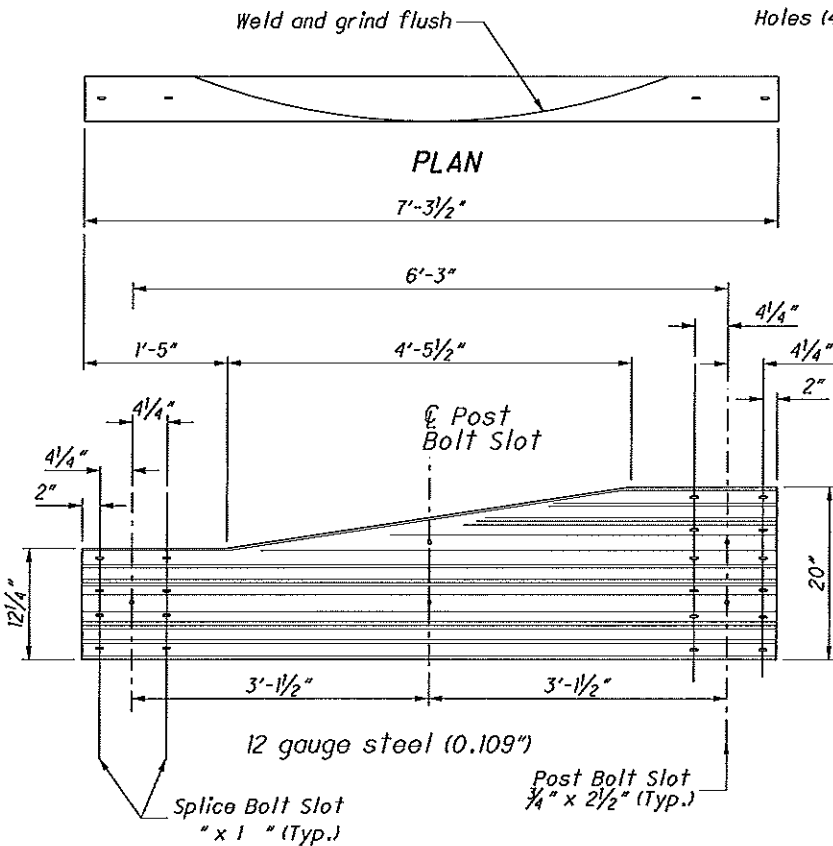
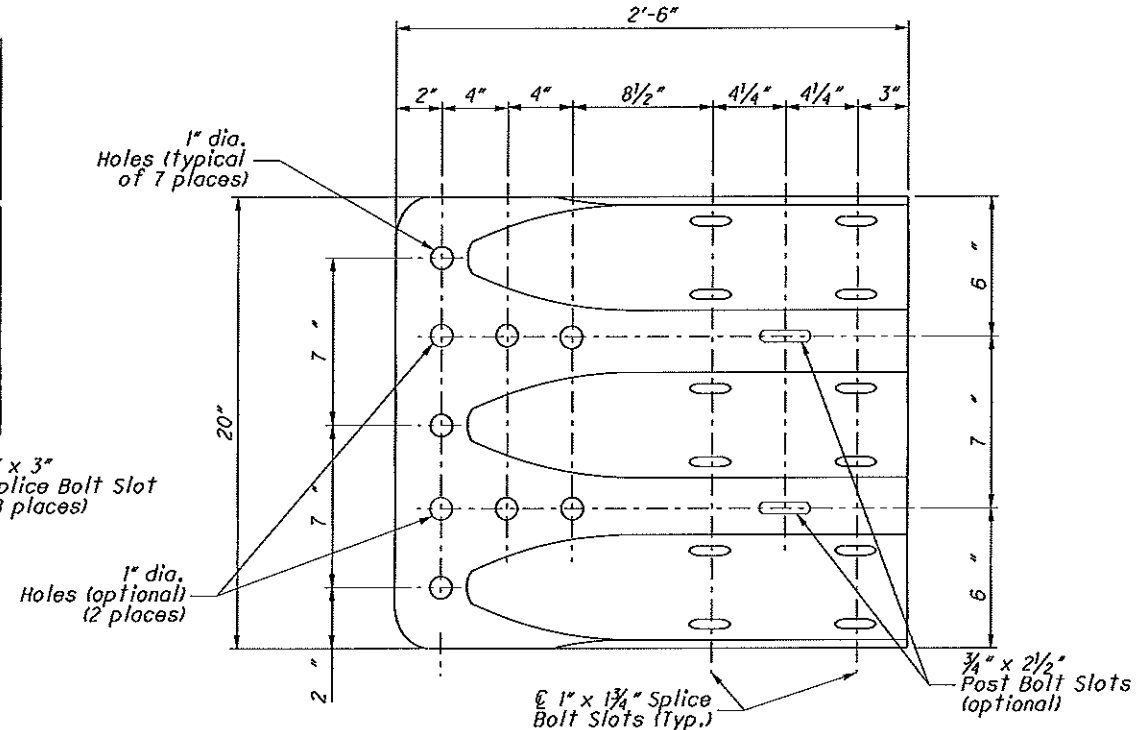
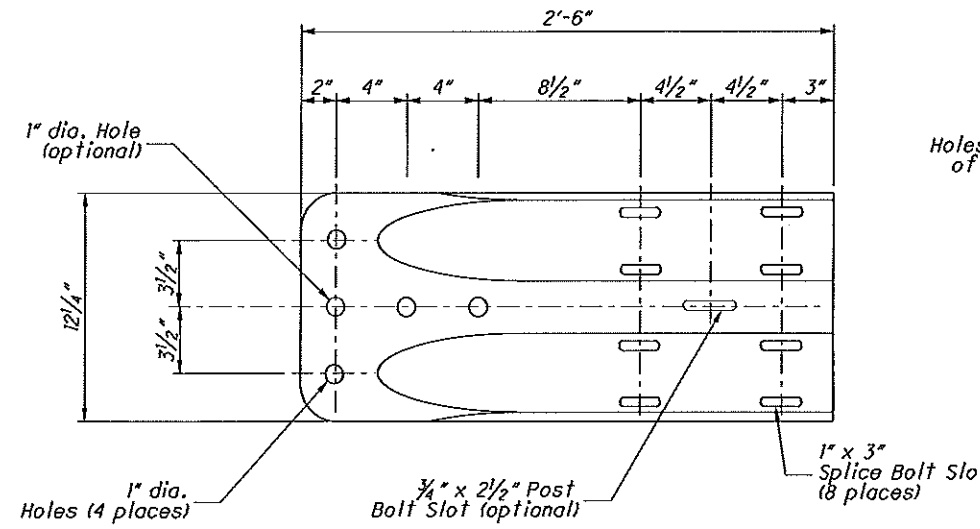
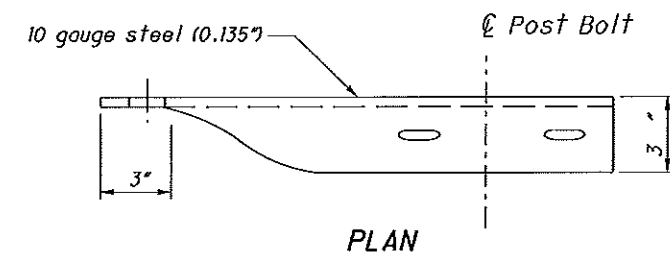
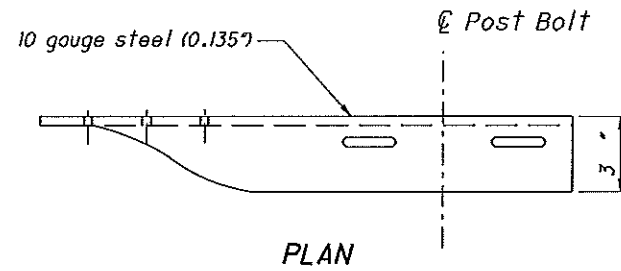
**GENERAL:** Components shown on this drawing are used in a variety of guardrail systems. See individual guardrail drawing for specific applications.

See CMS 606 for guardrail specifications not covered on these drawings.

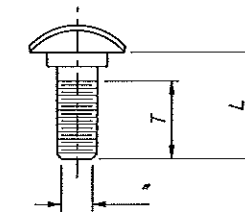
Refer to AASHTO M 180 for dimensional details of W-Beam and Thrie-Beam rail elements, related buffer and end sections, beam splices, post and splice bolts, nuts, and Type 1 W-Beam to Thrie-Beam Transition sections.

**RAIL ELEMENTS:** W-Beam Rail has an effective length of 12'-6" unless otherwise specified, with 3/4" x 2 1/2" post bolt slots on 6'-3" centers regardless of post spacing. Field punch or drill bolt holes or slots for irregularly spaced posts as specified in CMS 606.04.

**RAIL SPLICES:** Lap splices between two rail elements or between a rail and terminal connector in the direction of traffic. Lap the buffer or flared end sections in the direction of traffic.



**ELEVATION THRIE-BEAM TERMINAL CONNECTOR**



GUARDRAIL BOLT (For Post and Splice Bolts)		
L	T min.	Bolt Use
18" (Standard Rail)	4"	Type 5: WP/WB, PB
26" (Barrier Rail)		
10"	4"	Type 5: SP/WB, PB
1 1/4"	1"	Splice Bolt

WP = Wood Post    WB = Wood Blockout  
 SP = Steel Post    PB = Plastic Blockout

Longer Bolt may be needed for round Wood Post larger than 8" dia.

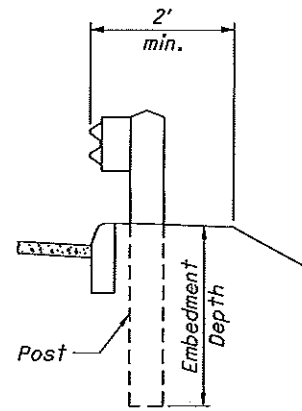
**ELEVATION TYPE 2 TRANSITION SECTION (Asymmetric W to Thrie-Beam)**

For details of Type 1 Transition Section (Symmetric), refer to AASHTO M 180, Figure 4.

**ELEVATION W-BEAM TERMINAL CONNECTOR**

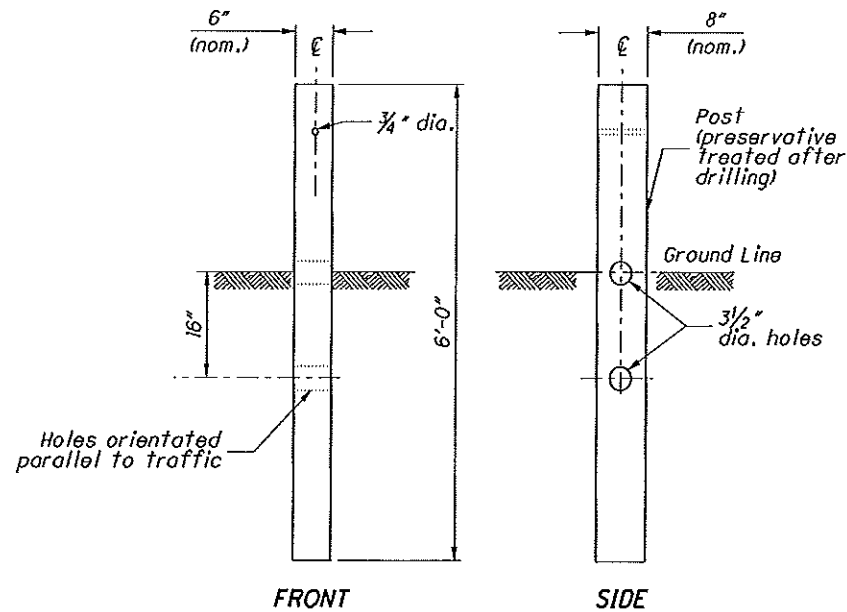
**ELEVATION W-BEAM FLARED END SECTION**

DESIGN FILE: \\projects\94390\roadway\sheet\p15\_CR-1.1.dgn MODELNAME: Sheet WORKSTATION: vanhorn DATE: 8/10/2015

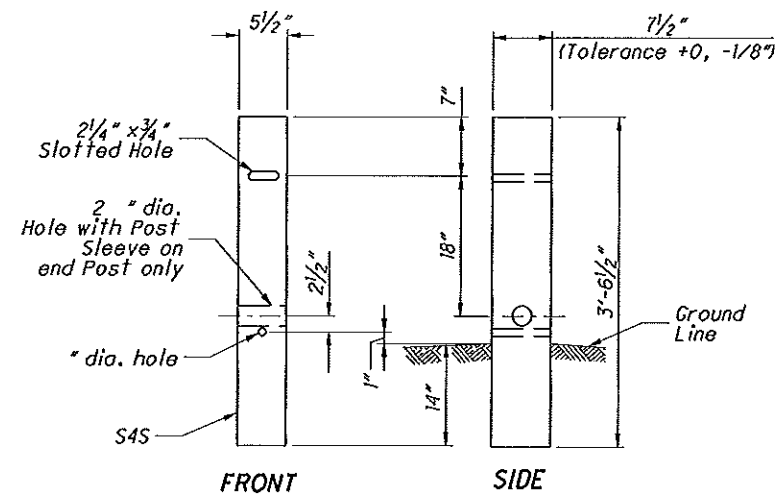


**DETAIL A**

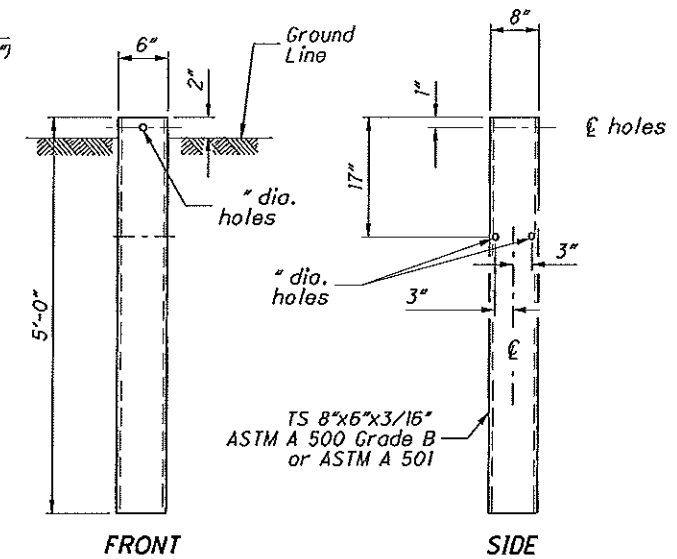
See POST EMBEDMENT DEPTH Note



**TYPE 1 BREAKAWAY CRT POST**



**TYPE 2 BREAKAWAY CRT POST**



**STEEL GROUND TUBE**

**NOTES**

**GUARDRAIL HEIGHT:** For initial installation, construct the guardrail within  $\pm 1"$  of the standard height,  $h$ , or 29" to the top of W-Beam rail. (See MEASURING GUARDRAIL HEIGHT Detail.)  
When subsequent projects, such as resurfacings, affect the height of existing guardrail, the finished height is to be within  $\pm 2.5"$  of the standard height.

**POST EMBEDMENT DEPTH:** Standard embedment is 3'-5" min. Where less than 2' of graded shoulder width (10:1 or flatter) exists, measured from the face of the guardrail (see DETAIL "A"), use longer posts so that a minimum of 5'-5" embedment depth is provided. Payment for the longer posts will be made at the unit price bid for ITEM 606 - GUARDRAIL POST, 9', Each.

**SPECIAL POST MOUNTINGS:** Install posts located over a drainage inlet or structure as shown in the FOOTING ANCHOR Detail, or anchor per the details shown on SCD GR-2.2.

Install posts located over a footing with a cover of less than 2'-6" with a footing anchor as detailed here. (A plate, as detailed on SECTION B-B of SCD GR-2.2, may be used as an alternative attachment method.) Where the cover is between 2'-6" and 3'-5", the footing anchor may be omitted and the post encased instead with 4" (min.) of concrete.

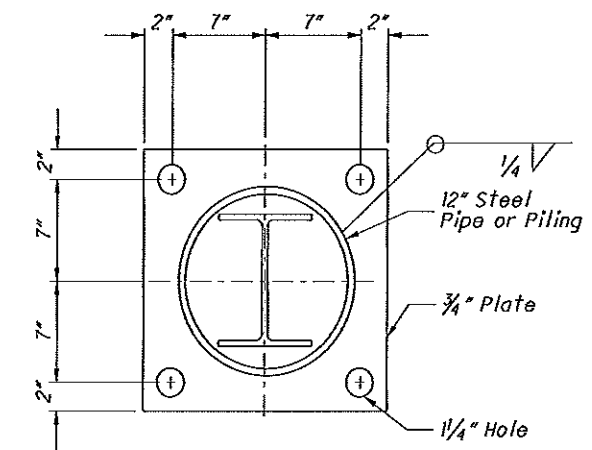
Do not drive posts located over a culvert with less than 4'-3" of cover; instead set in drilled or dug holes. Where the available post embedment depth is less than 3'-5", encase the post with a minimum of 4" concrete.

All costs associated with special post mountings are included in the unit price bid of Item 606 Guardrail of the type specified in the plans.

**ANCHORS:** Holes and grouting shall comply with CMS 510. Use either cement or non-shrink, nonmetallic grout.

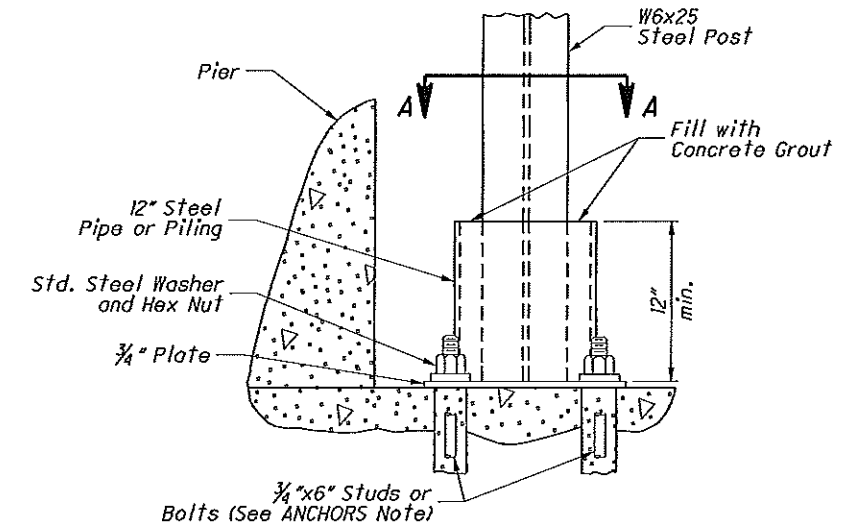
Expansion shield anchors as specified in CMS 712.01 may be substituted except where concrete deterioration has occurred, as determined by the Engineer. Where self-drilling anchors are used, drill the holes with the expansion shield (not by a drill bit) and install the shield flush with the concrete surface.

**PROTECTIVE COATING:** In lieu of the complying with CMS 710.06, coat expansion shields, anchors and concrete insert anchor assemblies embedded in concrete in accordance with ASTM A 153 or be of stainless steel. Any bolts screwed into these devices shall meet CMS 710.06. (See sheet 3 for Concrete Insert Anchor Assembly Detail.)



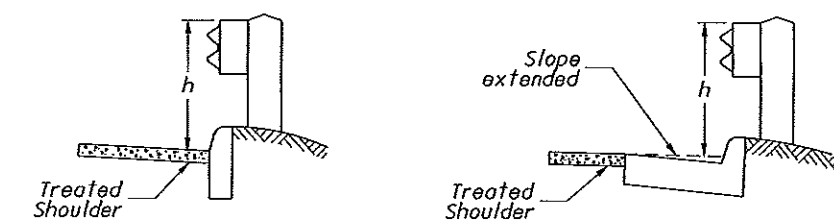
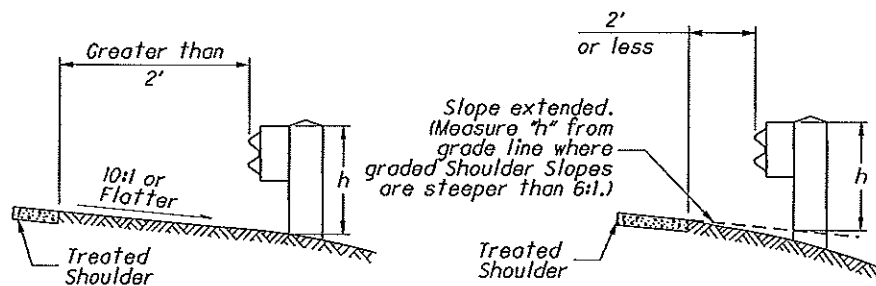
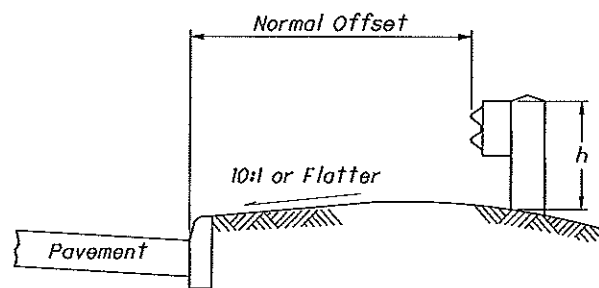
**SECTION A-A**

Footing Anchor and hardware need not be galvanized



**ELEVATION FOOTING ANCHOR**

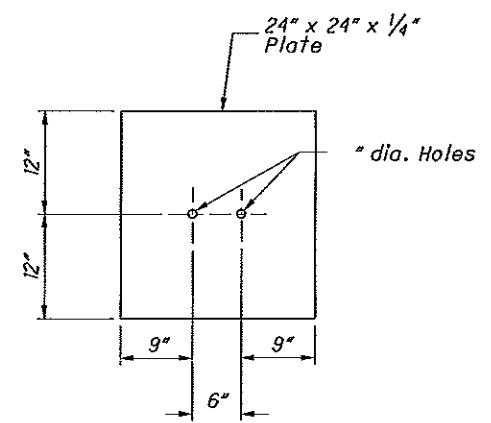
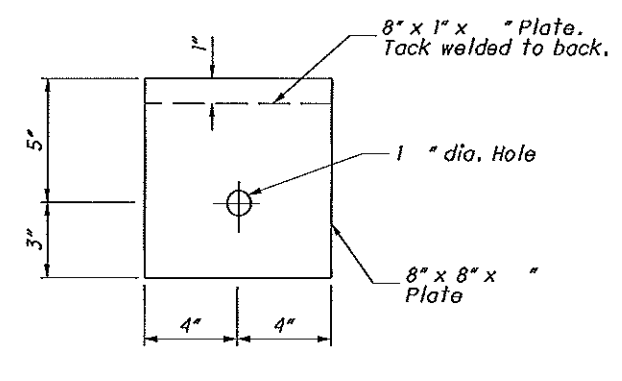
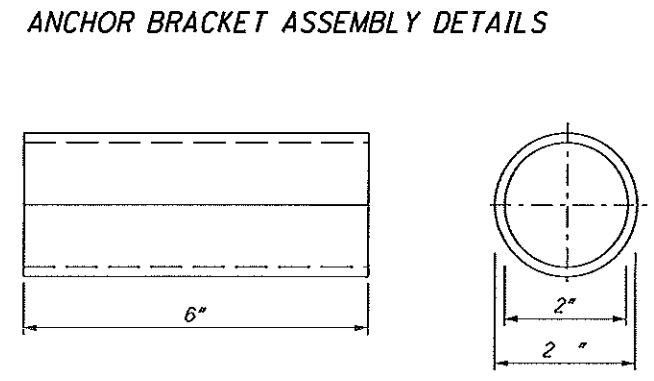
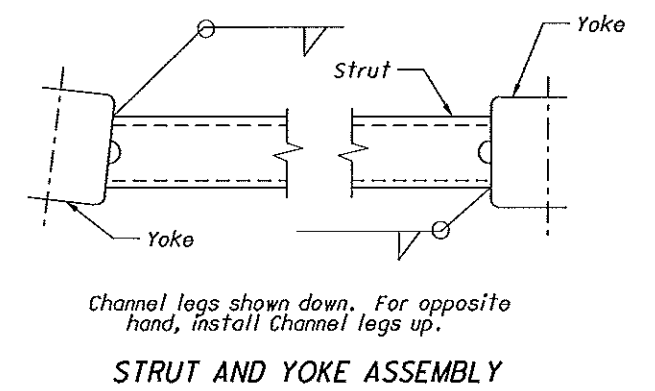
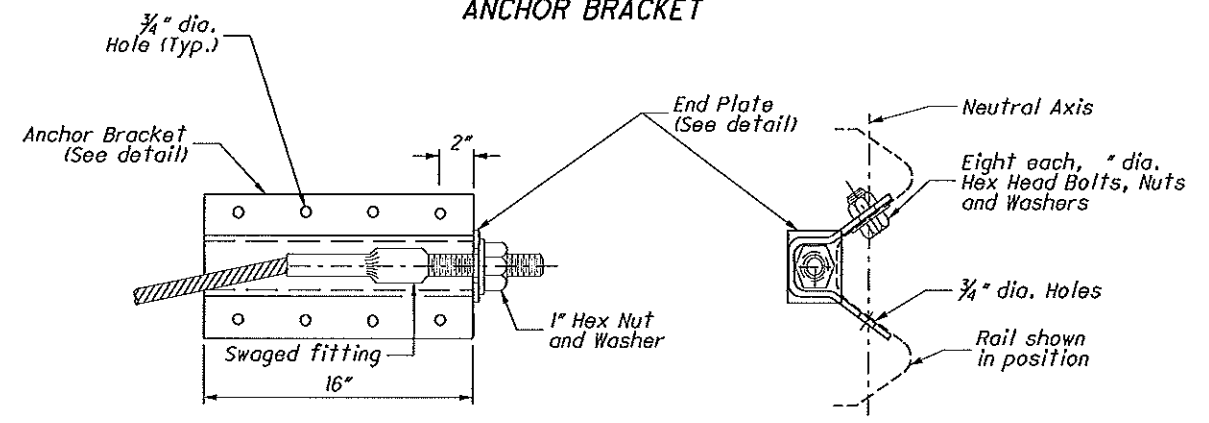
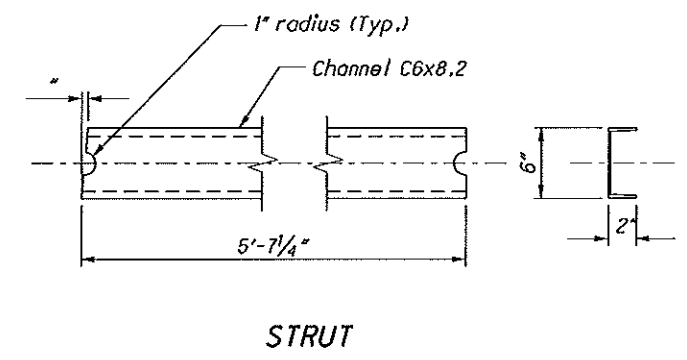
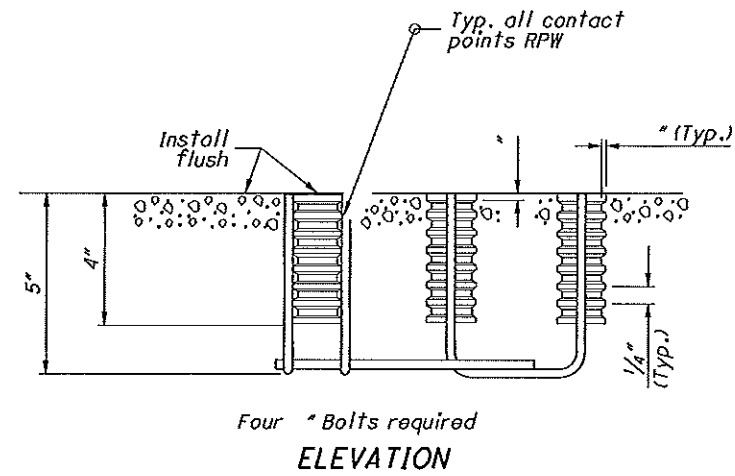
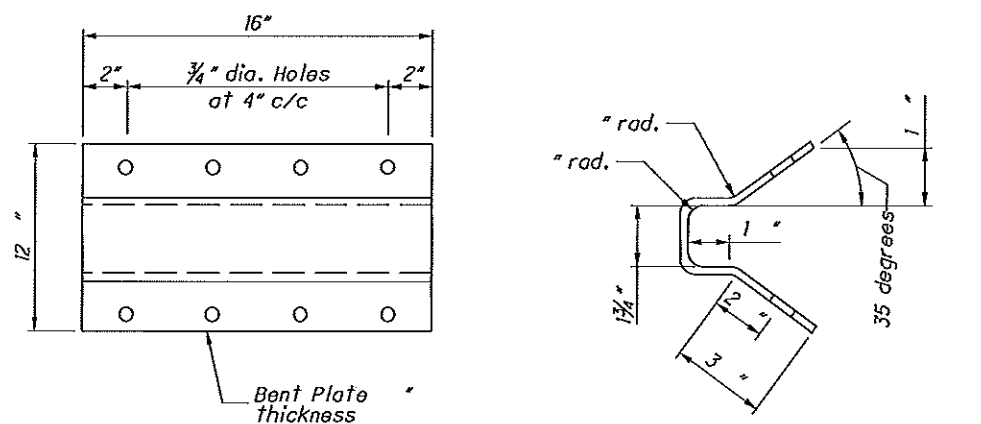
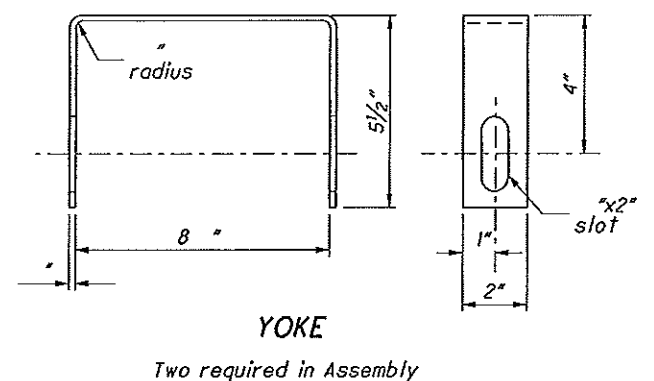
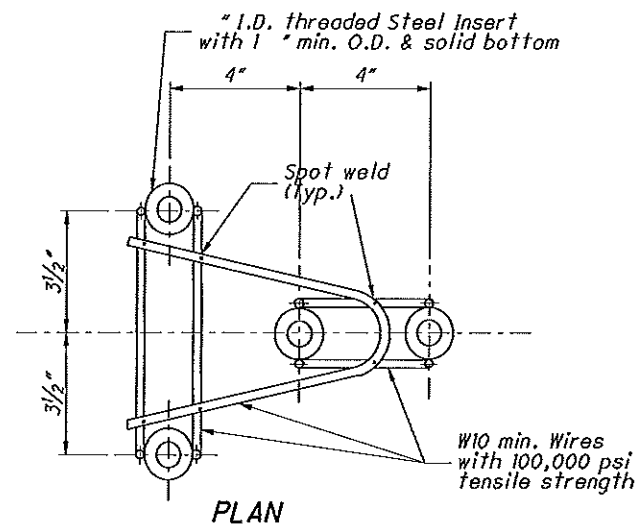
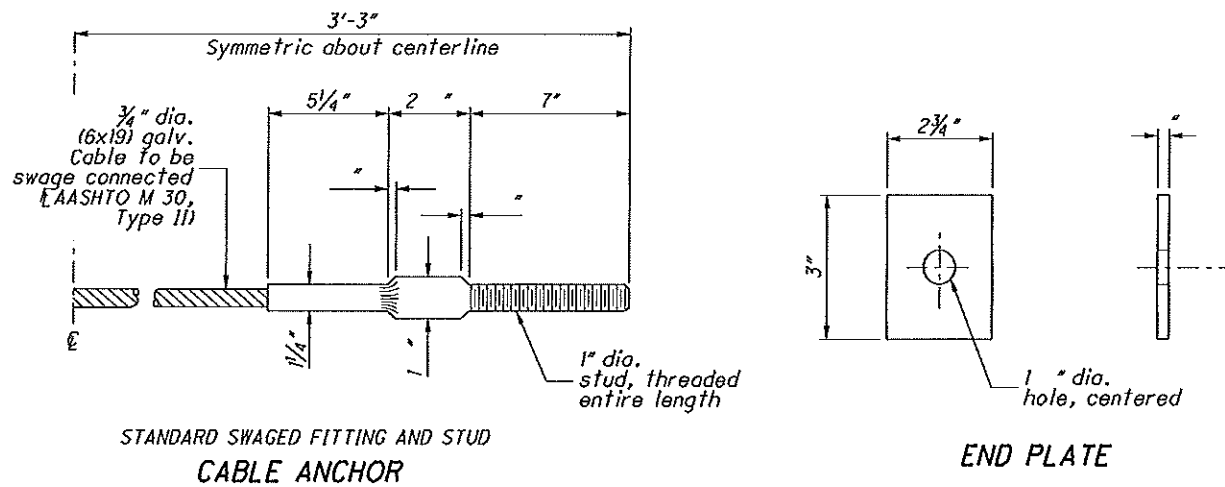
See SPECIAL POST MOUNTINGS Note.

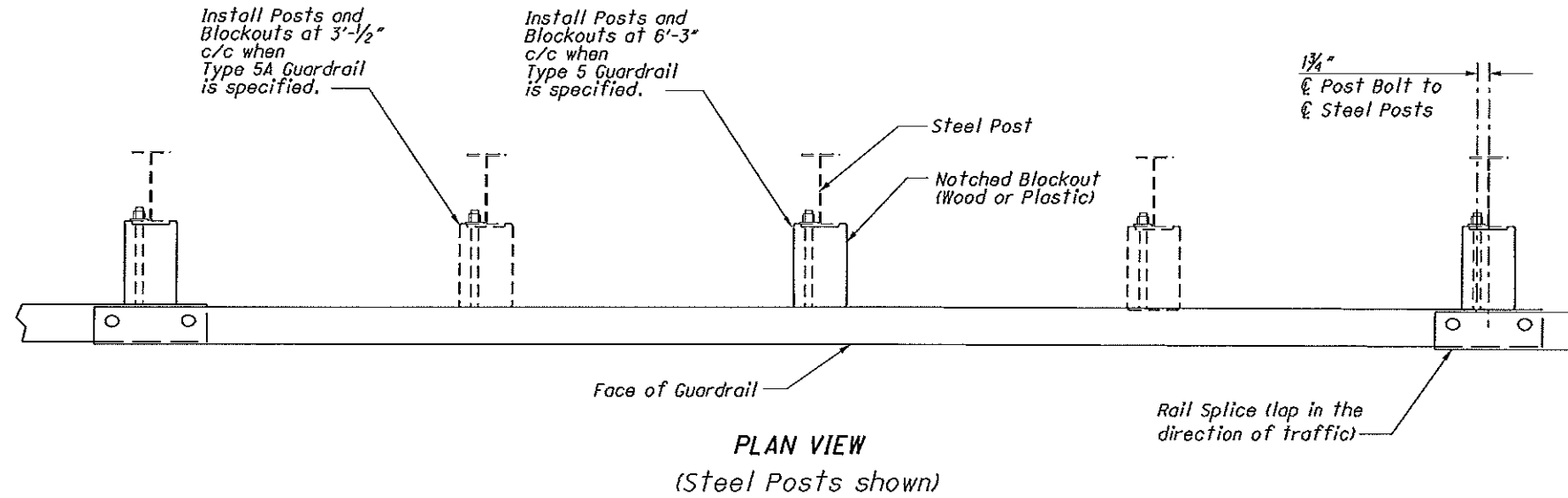


$h$  = Standard Height (See GUARDRAIL HEIGHT Note)

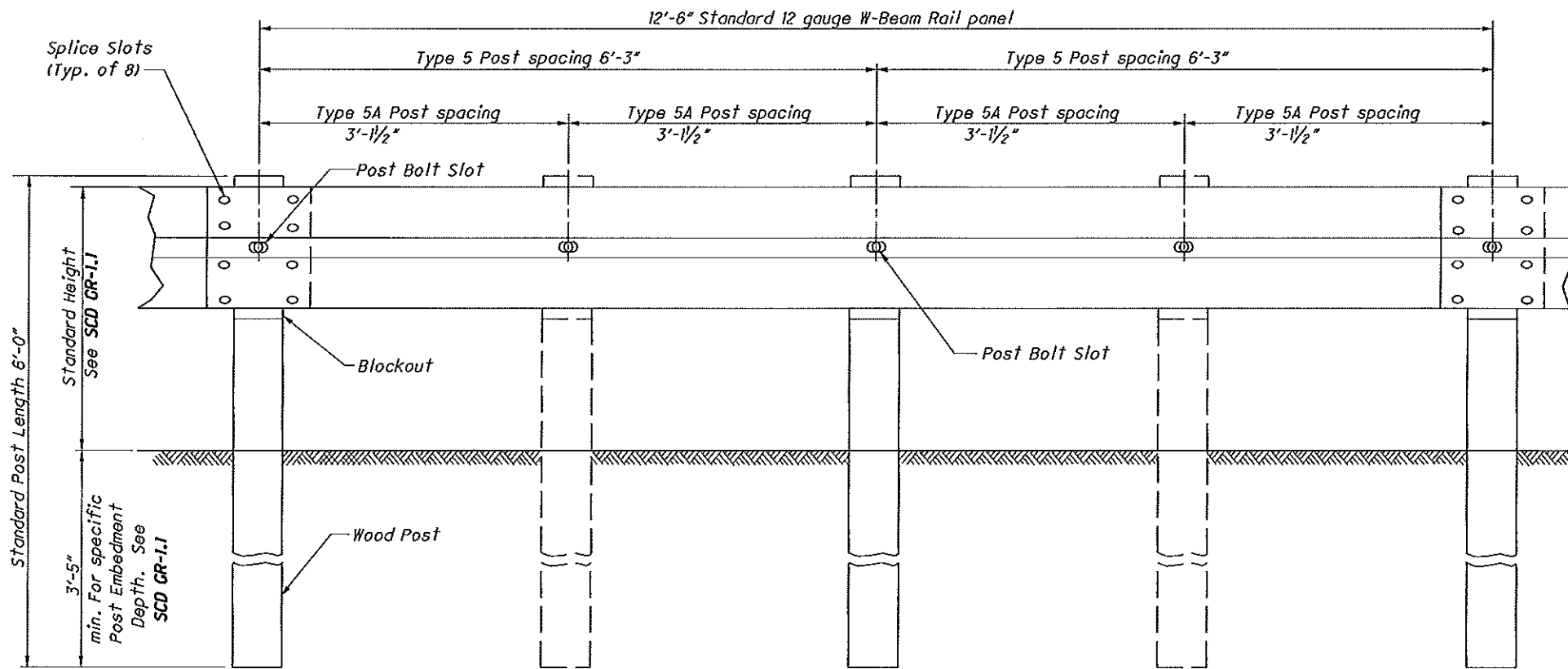
**MEASURING GUARDRAIL HEIGHT**

DESIGN FILE: \\projects\94390\roadway\sheet\p15\_GR-1.1.dgn  
 MODELNAME: Sheet  
 WORKSTATION: vanhorn  
 DATE: 8/10/2015





PLAN VIEW  
 (Steel Posts shown)



ELEVATION  
 (Wood Posts shown)

**NOTES**

**RAIL:** Use W-Beam rail meeting AASHTO M 180 Type II Class A, as specified in CMS 606.

**POSTS:** Posts may be constructed of wood or steel. Wood posts may be round or 6"x8" square-sawn.

Use round wood posts on runs of single-sided rail. The round posts shall be 8"±1 in diameter at the top and not more than 3" larger at the butt with a uniform taper.

Fabricated wood posts with square ends. Posts shall be pressure-treated as per CMS 710.14. Bore bolt holes and, if required, trim the tops of posts after the posts are set.

Steel posts are to be W6x9 or W6x8.5 galvanized steel. Use the same type of post throughout the length of the project unless otherwise specified in the plans or permitted by the Engineer.

All posts are 6'-0" long unless specified otherwise in the Contract Document. Posts may be set in drilled holes or may be driven to grade.

**WELDED BEAM POSTS:** Welded beam guardrail posts may be used for Item 606, Guardrail, provided the web and flange sizes are as shown here. Welding of the web to the flanges must comply with ASTM A 769, Class 1, using Grade 36 steel (250 MPa yield point) with the following exceptions:

- Sec. 7.2 Test reports of tensile properties for each lot shall accompany each shipment.
- Sec. 12 Beams that have imperfections repaired by welding shall not be accepted for use in Item 606.
- Sec. 13 Random samples shall be tested by the Department from materials delivered to the project site, or other locations designated by the Laboratory.

**ALTERNATE POSTS:** Engineered guardrail posts having met NCHRP 350 criteria, and listed on the Office of Materials Management's Approved List are permitted as an equal alternate when installed according to the Manufacturer's instructions and within the limitations shown on the Approved List.

**BLOCKOUTS:** Blockout dimensions are dependent on post used. Wood Blockouts are to be pressure treated as specified in CMS 710.14. Bore bolt holes. Approved alternate blockouts may be used in lieu of the wood blockouts shown. The approved list is maintained by the Office of Roadway Engineering.

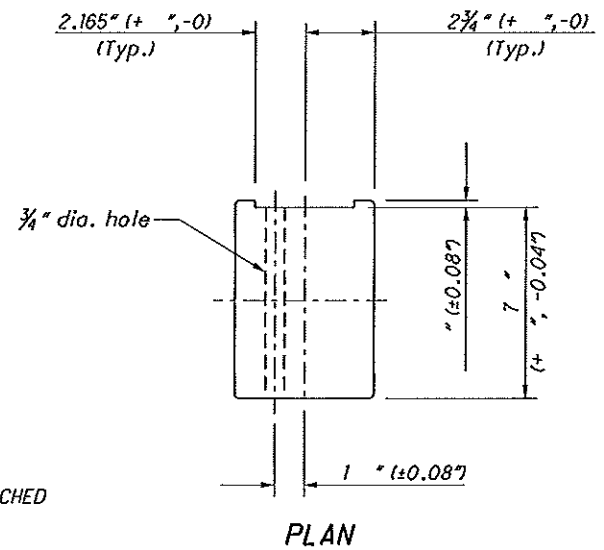
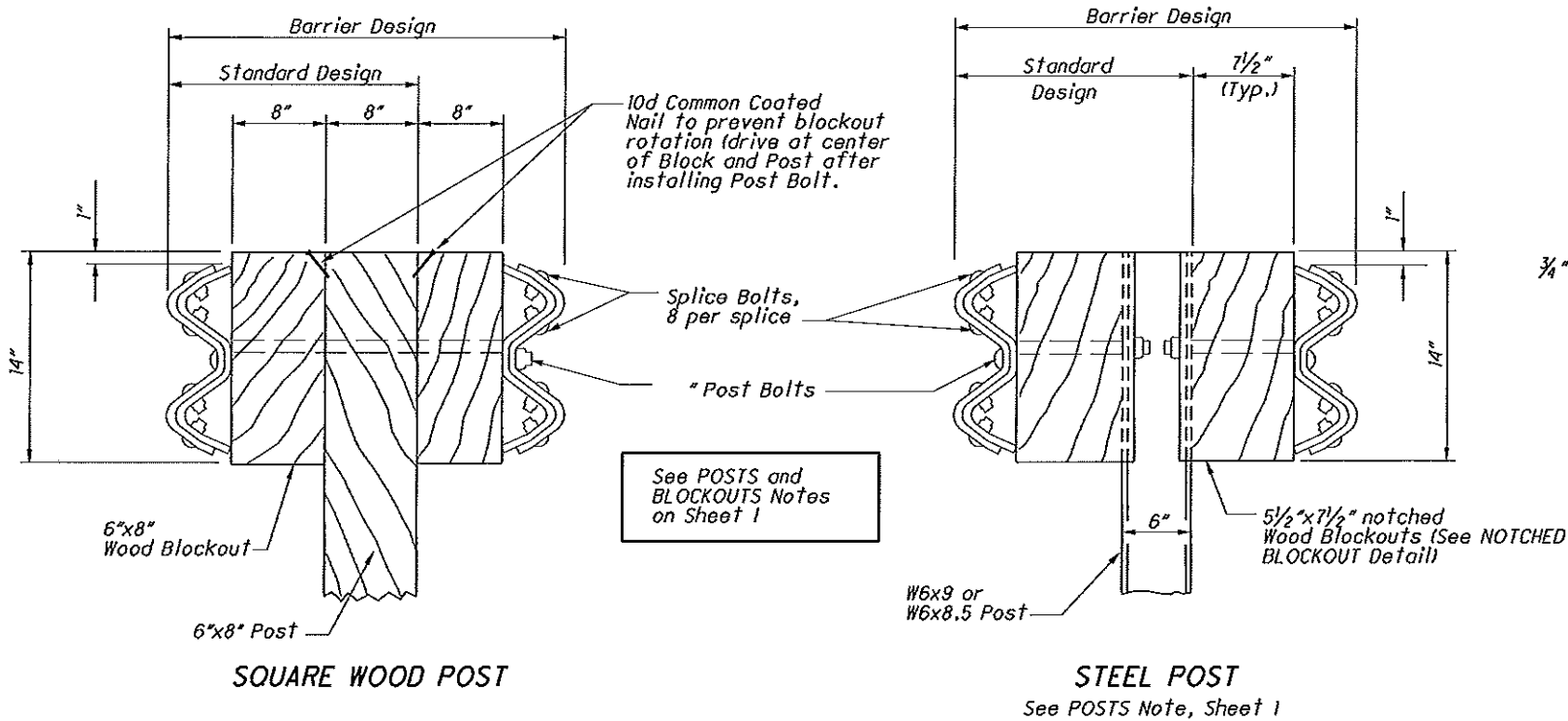
**WASHERS:** Install appropriate sized standard galvanized steel washers on the nut side of bolts installed on wood posts.

**DELINEATION:** For barrier reflectors, see CMS 626.

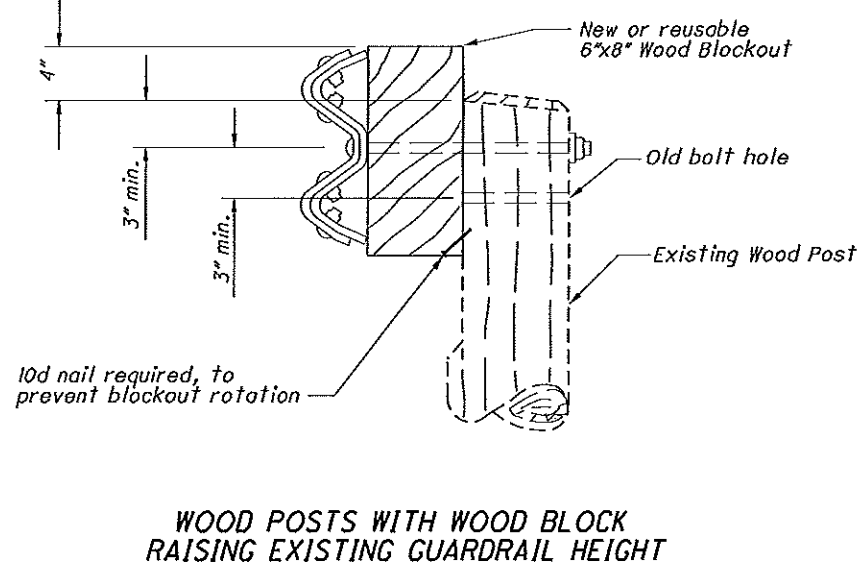
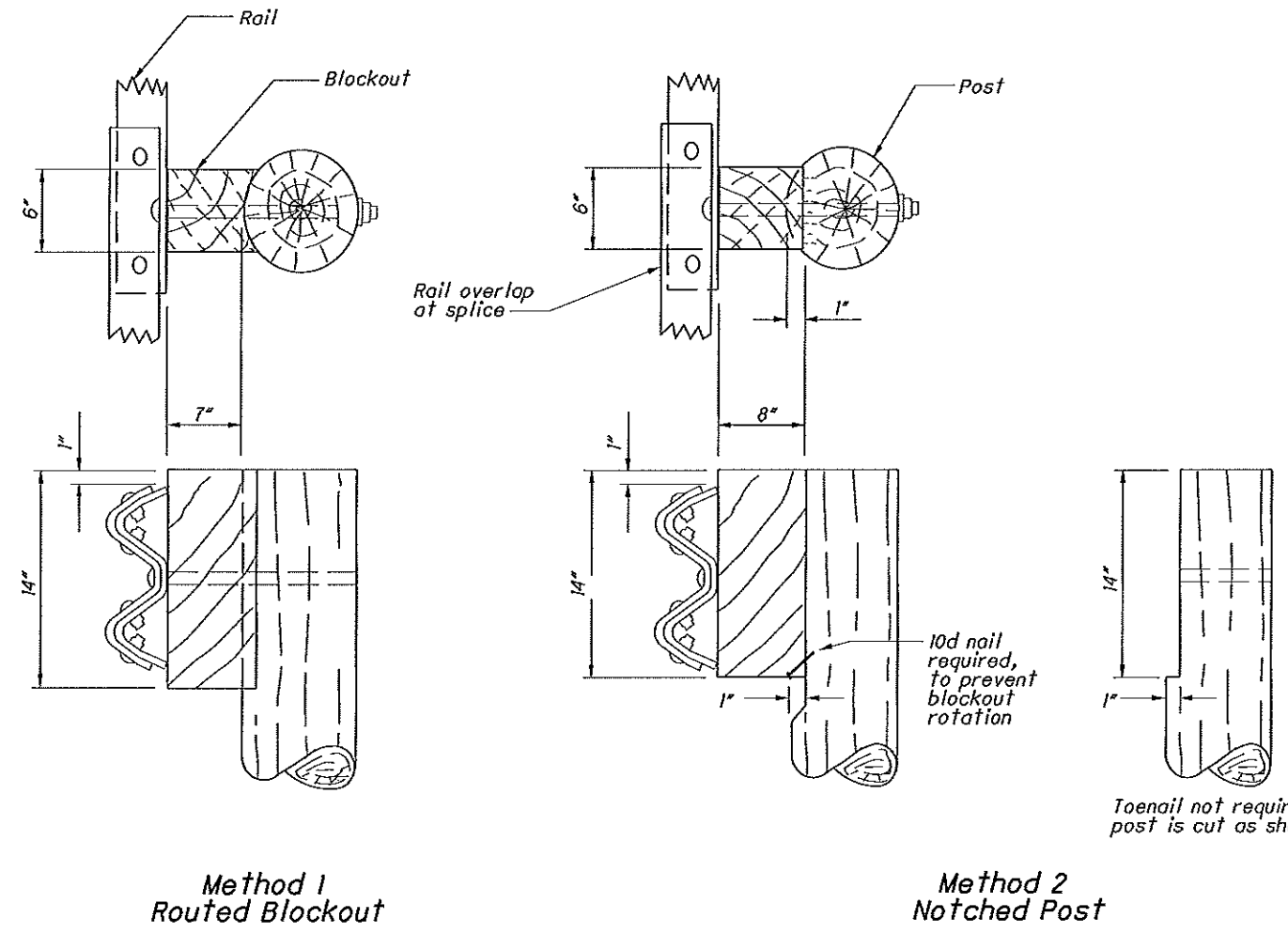
**MISCELLANEOUS:** For other guardrail details, see SCD GR-1.1.

STEEL BEAM POSTS (English)				
Size	Beam depth	Flange width	Flange thickness	Web thickness
Rolled W6x8.5	5.8"	3.94"	0.193"	0.170"
Rolled W6x9	5.9"	3.94"	0.215"	0.170"
Welded 6x8.5	6.0"	3.94"	0.193"	0.170"
Welded 6x9	6.0"	3.94"	0.215"	0.170"

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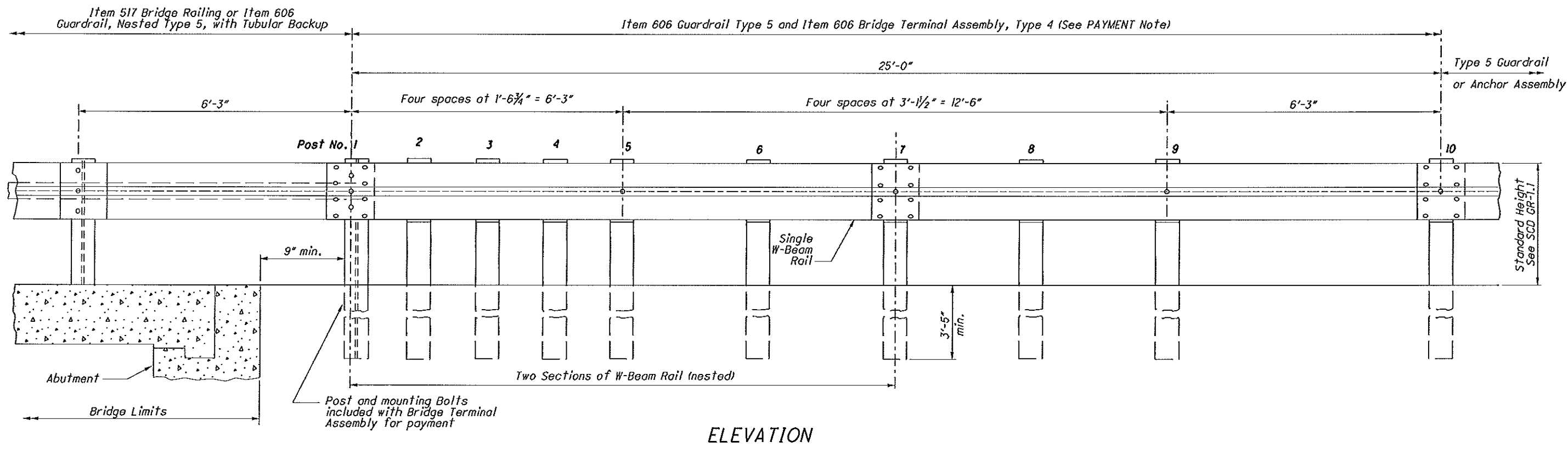
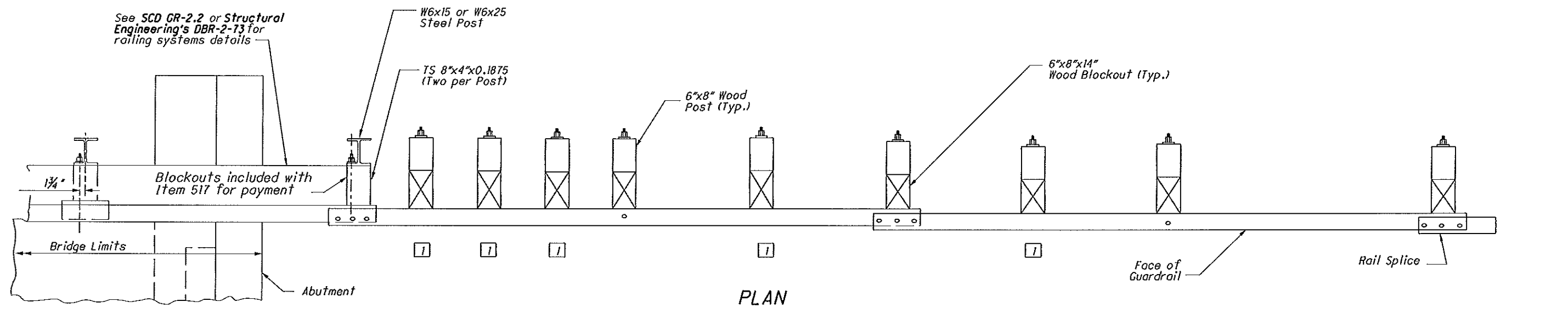


**NOTCHED BLOCKOUTS FOR STEEL POSTS**  
 See BLOCKOUTS Note on Sheet 1



Alternate methods of placing the Blockouts on round Posts may be submitted for consideration and approved by the Engineer.

**ROUND WOOD POSTS**  
 Single Sided runs only (Standard Design)



NOTES

**GENERAL:** For additional details, see SCD GR-1.1.

**APPLICATION:** The Type 4 Bridge Terminal Assembly shall connect Type 5 Guardrail runs to Type 5 Guardrail with Tubular Backup or to Deep Beam Bridge Guardrail (as shown on Structural Engineering SCD DBR-2-73).

**DETAIL INFORMATION:** The first post off the bridge shall be steel (W6x15 or W6x25). All holes in the off-structure end of the approach panel rail section spanning the abutment are slotted 1/4"x2 1/2". Tighten the bolts as specified for expansion joints in Item 606.05.

**POSTS:** Posts may be set in drilled holes or driven to grade. See SCD GR-1.1 for additional Post embedment details. Guardrail is not attached to certain posts (see LEGEND).

**WOOD POSTS -** Use square sawed pressure treated wood as specified in CMS 710.14 and fabricated with square ends. Bore bolt holes and trim the tops of posts, if required after the posts are set.

**STEEL POSTS -** are allowed as an alternate. Use W6x9 or W6x8.5 in lieu of the 6"x8" wood post. Use same post material through-out assembly.

**BLOCKOUTS:** Use wood blockouts only. Steel or plastic blockouts are not permitted. Notched wood blockouts are used with steel posts.

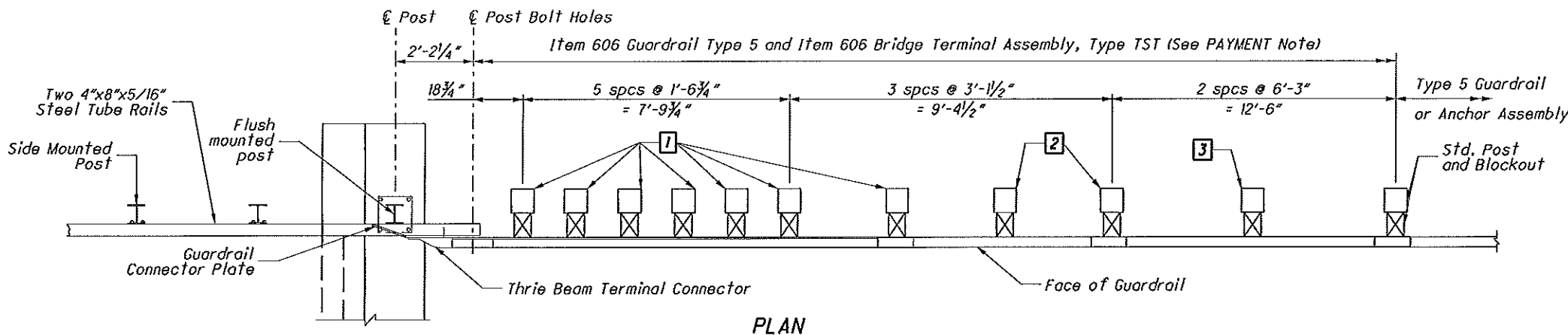
**FLARED GUARDRAIL:** Start Standard Guardrail Flares as shown on SCD GR-5.1 at or beyond Post No. 10; however, the flare may begin at Post No. 7.

**PAYMENT:** Item 606 - Bridge Terminal Assembly, Type 4, Each, includes the cost of extra components in excess of normal guardrail, such as additional posts and other hardware. The TS 8"x4" spacers and tubular backup rail extending to the first post off the bridge is included with Item 517 - Railing, or Item 606 - Guardrail, Nested Type 5 with Tubular Backup, for payment.

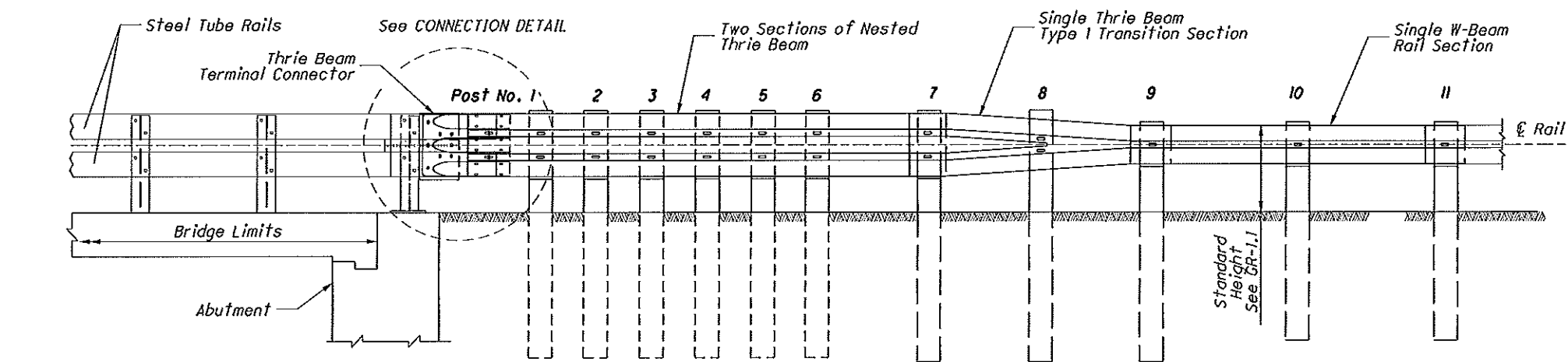
LEGEND

□ Guardrail is not attached to posts at Posts 2, 3, 4, 6, and 8. Blockout is fastened to post with standard Post Bolt.

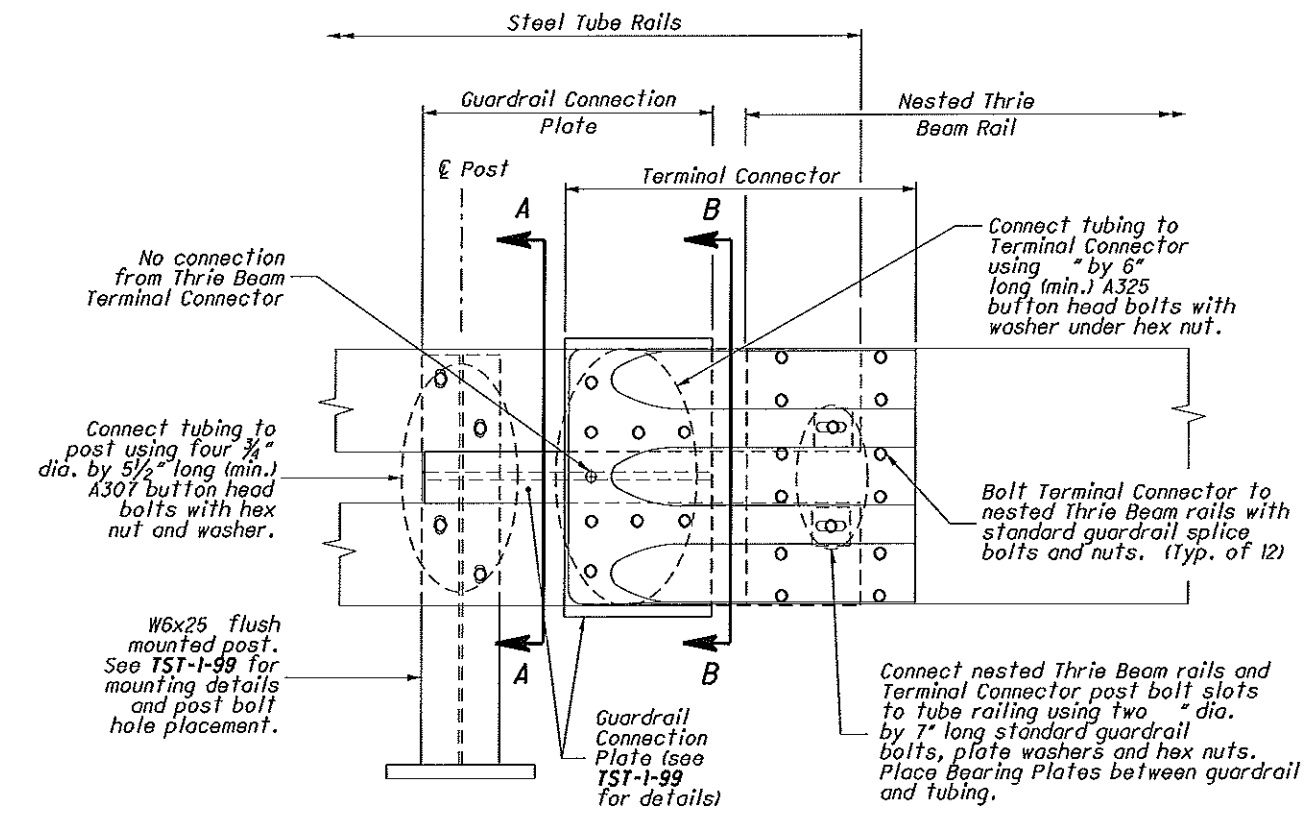
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DATE: 8/10/2015  
WORKSTATION: vnhorn



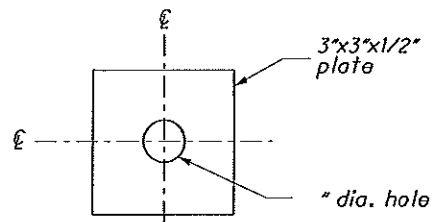
PLAN



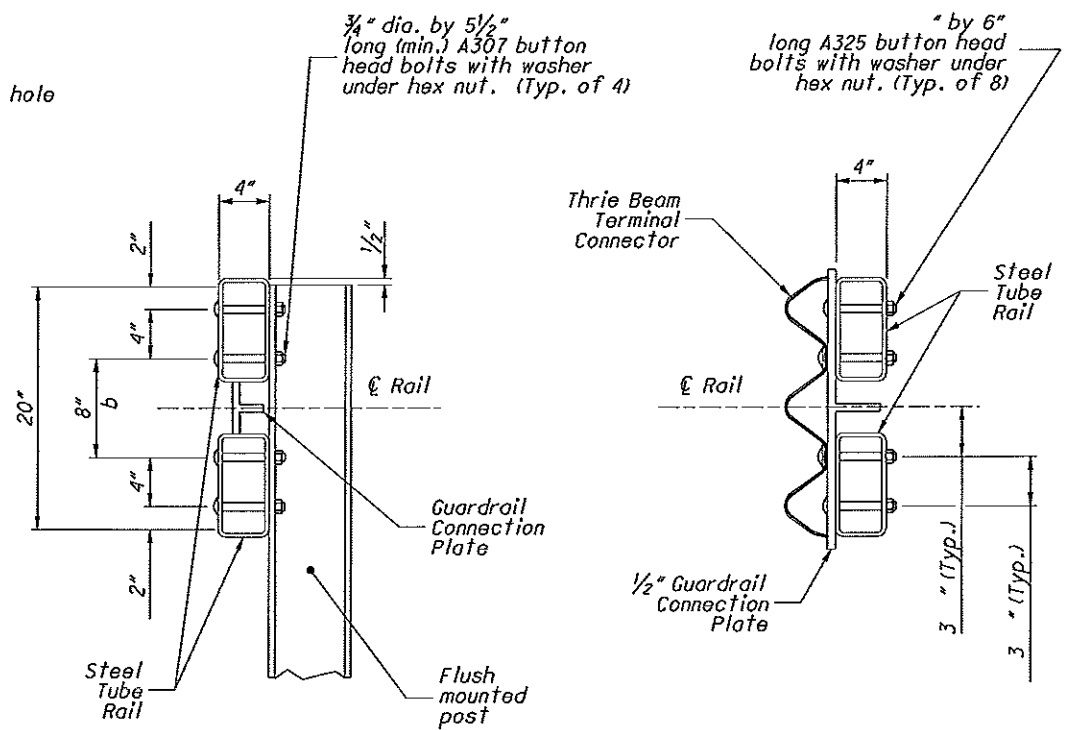
ELEVATION



CONNECTION DETAILS



AASHTO/AGC/ARTBA  
Standardized Hardware  
Guide part FW09  
BEARING PLATE



SECTION A-A

Section through Tubing at Post

SECTION B-B

Section through Tubing at Terminal Connector

NOTES

**GENERAL:** For additional guardrail details, including Thrie Beam Terminal Connector, see SCD's GR-1.1.

**APPLICATION:** The Type TST Bridge Terminal Assembly shall be used to connect guardrail runs to both the approach and trailing ends of twin steel tube bridge railings.

See **Structural Engineering's SCD TST-1-99** for Flush Mounted post and Guardrail Connection Plate and tubing details, (including tubing bolt hole placement).

**POSTS:** Posts may be set in drilled holes or driven to grade.

**WOOD POSTS** shall be square, sowed pressure treated wood per CMS 710.14 and fabricated with square ends. Bolt holes shall be bored and taps of posts trimmed, if required, after posts are set.

**STEEL POSTS:** W6x9 (or W6x8.5) posts may be substituted for 6x8 wood posts. Notched wood blockouts, as shown on SCD GR-2.1 (except 22" long for posts 1 thru 7), are to be used with steel posts. Plastic blockouts are not permitted.

**PAYMENT:** Item 606 - Bridge Terminal Assembly, Type TST, Each, shall include the extra cost, in excess of normal guardrail costs, for additional and different type posts and blockouts, nested Thrie Beam sections, Transition sections, Terminal Connector, bearing plates, bolts, nuts, washers and other hardware.

LEGEND

- 1 Posts 1 thru 7:  
6"x8"x6'-6" Wood Posts with  
6"x8"x22" Wood Blockouts
- 2 Posts 8 & 9:  
6"x8"x6'-6" Wood Posts with  
6"x8"x14" Wood Blockouts
- 3 Post 10:  
6"x8"x6'-0" Wood Post with  
6"x8"x14" Wood Blockout

DESIGN FILE: \\projects\94390\roadway\sheet\p15\_GR-3.6.dgn  
 MODELNAME: Sheet  
 WORKSTATION: vanhorn  
 DATE: 8/10/2015

**NOTES**

**APPLICATION:** On Non-NHS roadways it may be used in the clear zone, with restrictions. See Section 603. Location & Design Manual, Volume 1.

**GENERAL:** For details not shown, see SCD GR-1.1 and other Drawings pertaining to specific guardrail type. Galvanize all steel parts.

**OFFSETS:** See SCD GR-5.1 for Standard Guardrail Flare. The 18" flare offset from normal face of rail, shown in the plan view (for single rail installations) will be utilized only where shoulder is insufficient for providing standard flares.

**POSTS:** Steel posts W6x9 are shown, but W6x8.5 posts are also permitted. See SCD GR-1.1 for additional embedment details.

**SPACERS:** Post B Spacers shall be made of 1/2" Steel Plate as specified in CMS 710.15 or low sections of W6x9 or W8x10 cut in the web (see dashed line on POST B Detail) and welded together on both sides.

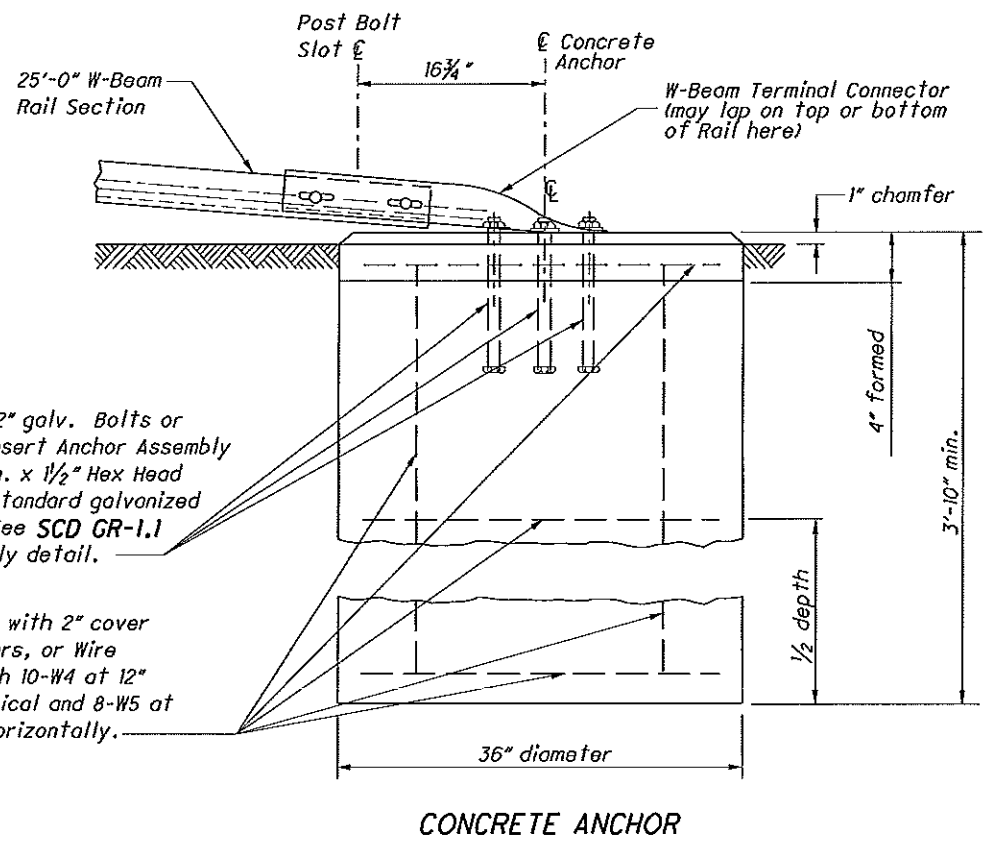
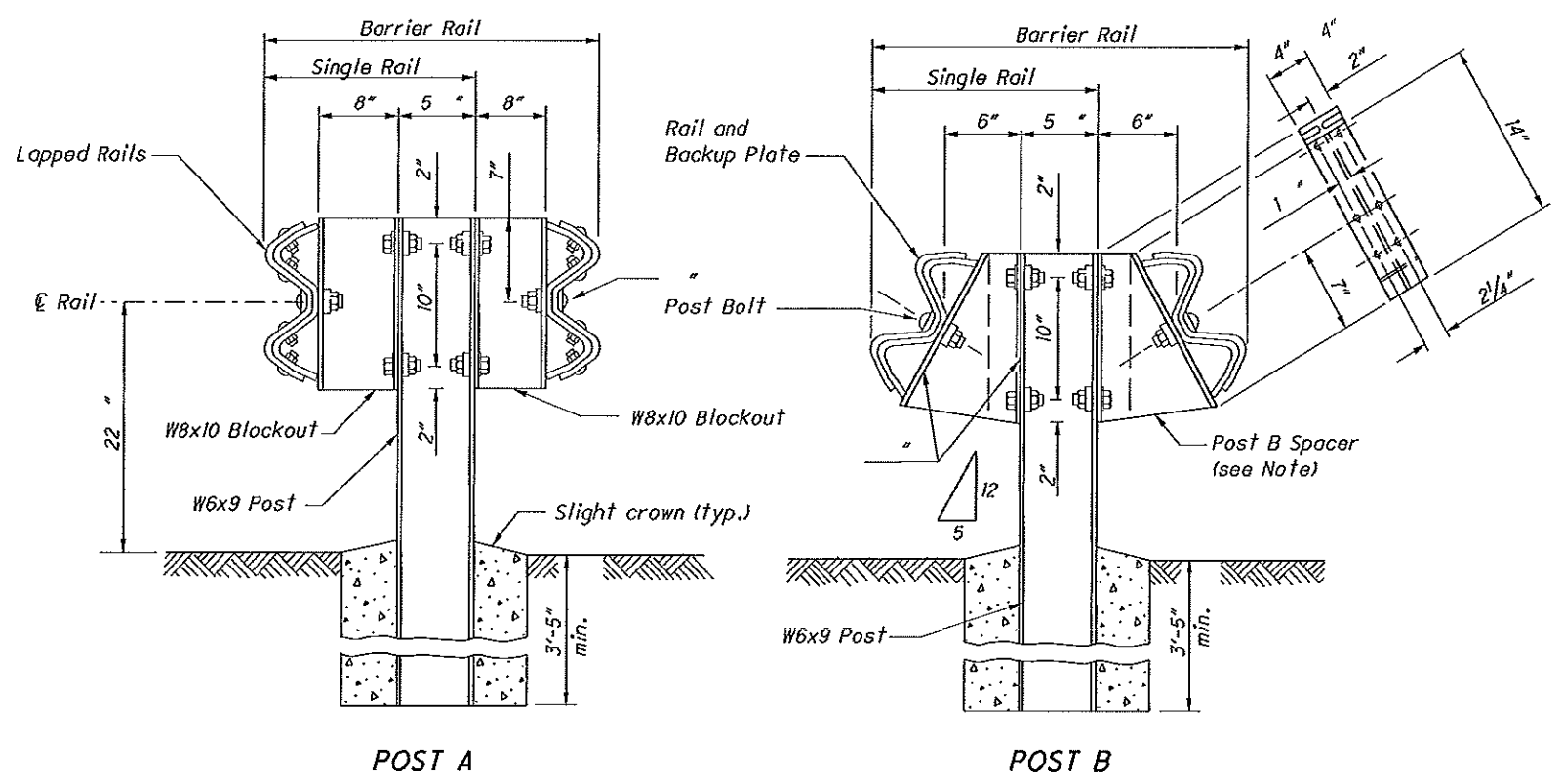
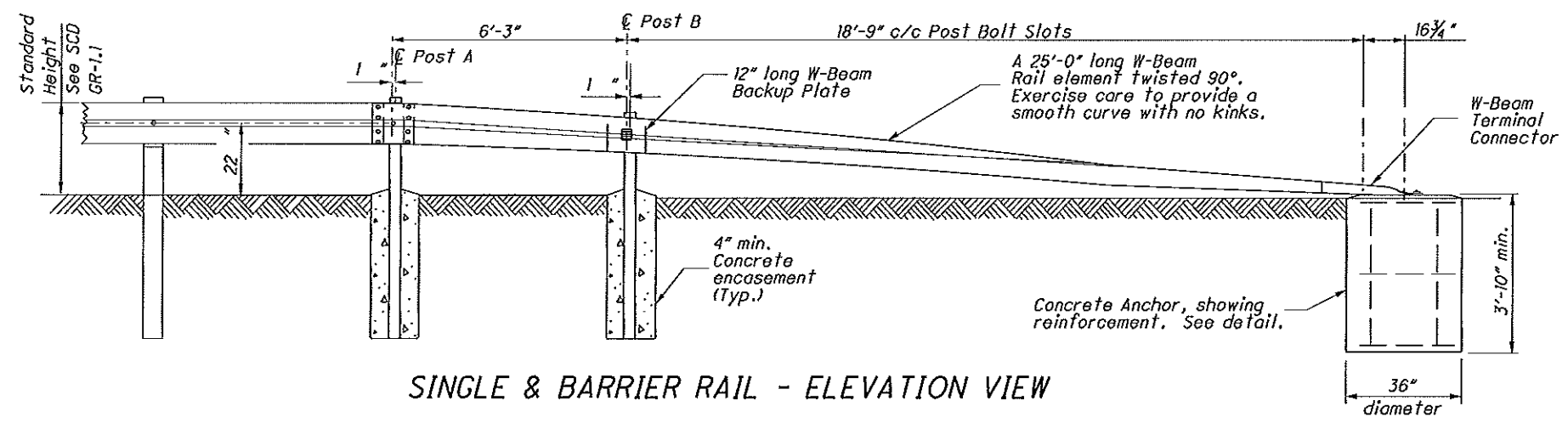
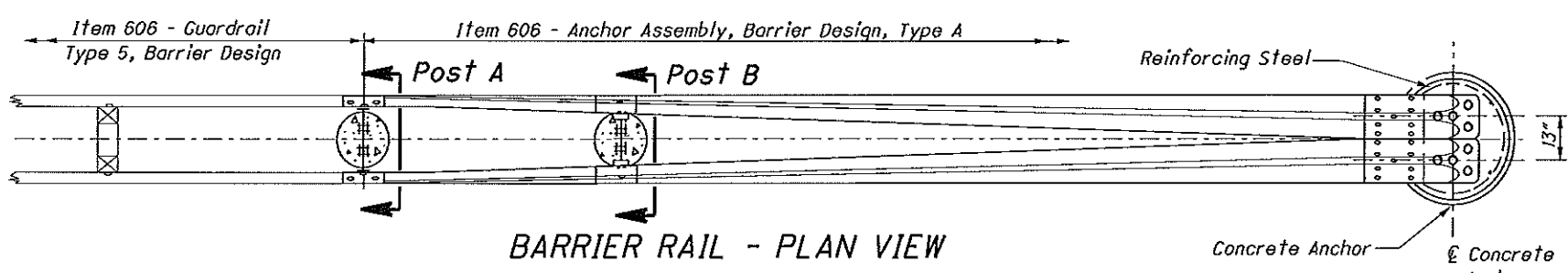
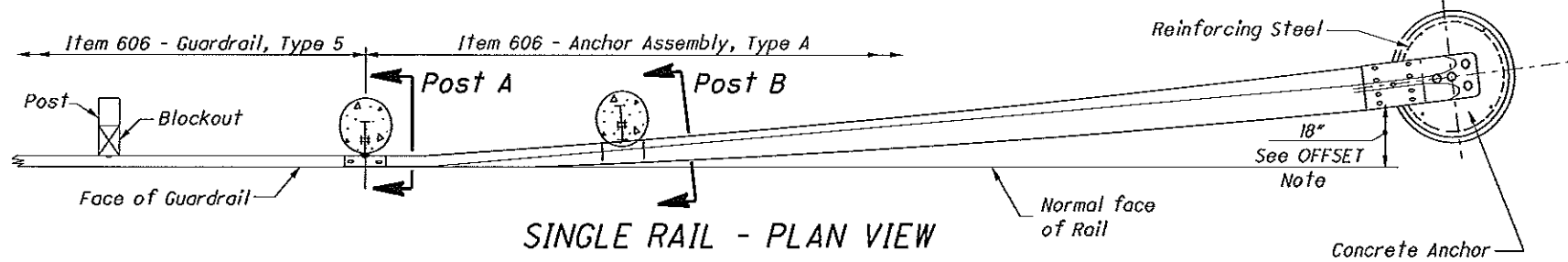
All steel spacers and posts may be provided with additional bolt holes so that these items will not be required to be made right and left handed.

Spacers shall be fastened to Posts with two 1/2" hex head bolts and nuts with standard washers on both sides.

**WASHERS:** All washers indicated on this drawing are standard galvanized steel of the appropriate size.

**CONCRETE ANCHOR:** Form top 4" of anchor and slope the top to conform to slope of the adjacent ground. The 36" diameter anchor may be replaced by a 2'-6" square anchor at the contractor's option.

**PAYMENT:** include all materials and labor for the 25'-0" Single Rail, Type A Anchor Assembly in the unit price bid for Item 606 - Anchor Assembly, Type A, Each. Pay for all materials and labor for the 25'-0" Barrier Rail under the unit bid price Item 606 - Anchor Assembly, Barrier Design, Type A, Each.



\* dia. x 12" galv. Bolts or Concrete Insert Anchor Assembly with 1/2" dia. x 1/2" Hex Head Bolts and standard galvanized Washers. See SCD GR-1.1 for Assembly detail.

#3 bars with 2" cover on all bars, or Wire Cage with 10-W4 at 12" c/c vertical and 8-W5 at 6" c/c horizontally.

DESIGN FILE: \\projects\94390\roadway\sheet\ASD-302-0.00.dgn  
WORKSTATION: vanhorn  
DATE: 8/10/2015  
MODELNAME: Sheet



**NOTES**

**APPLICATION:** Use Type T Anchor Assemblies on the trailing end of guardrail runs, located outside of the clear zone of opposing traffic. The assembly is 12'-6" long, none of which can be considered the Length of Need for the guardrail run.

For termination requirements of driveways, see DRIVEWAY OPENING Detail on Sheet 2. For side road approaches and Terminals at Structures, see Location & Design Manual, Volume 1, Figure 603-3.

**ANCHORING OPTIONS:** Contractor may choose either the foundation tube (shown on this Sheet) or the concrete footing option (Sheet 2) to construct this anchor assembly.

If the foundation tube option is chosen, the contractor will take proper care to insure that the Soil Plate fasteners are not broken during the driving process.

Concrete footings may be cast-in-place or precast. Compact fill after placing precast unit.

**MATERIALS:** See SCD GR-1.1 for parts used on this anchor, including the CRT Breakaway Posts, Steel Ground Tube, Post Sleeve, Cable Anchor and Bracket Assembly.

Bearing Plate and Soil Plate is ASTM A709 Grade 36. Steel Ground Tube shall be ASTM A500, Grade B, and meet CMS 707.10. All angles, channels and plates shall meet CMS 711.01. All structural steel shall be galvanized as specified in CMS 711.02. All bolt washers indicated are standard galvanized steel of the appropriate size.

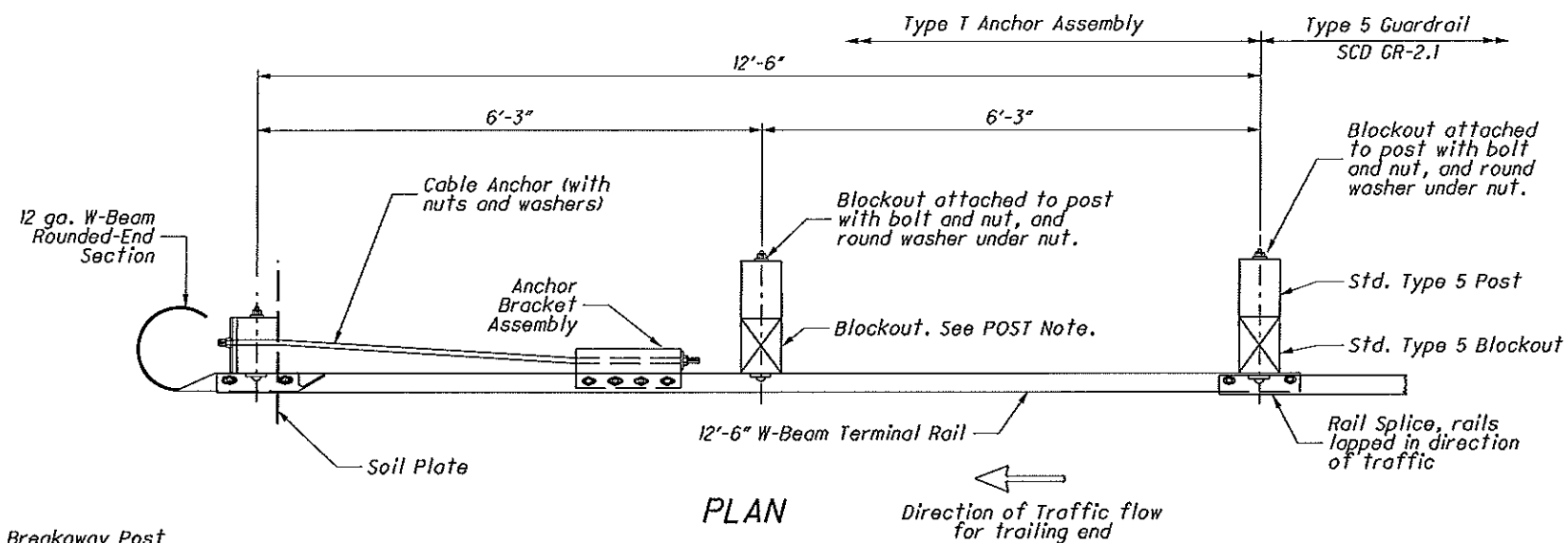
Concrete shall be class C.

Components on this anchor that are not detailed on SCD GR-1.1 include: 1) 12'-6" W-Beam Terminal Rail (standard part RWM14a), and 2) W-Beam Rounded End Section (RWE03a). For complete details and specifications, see part descriptions in the AASHTO/AGC/ARTBA Standardized Hardware Guide.

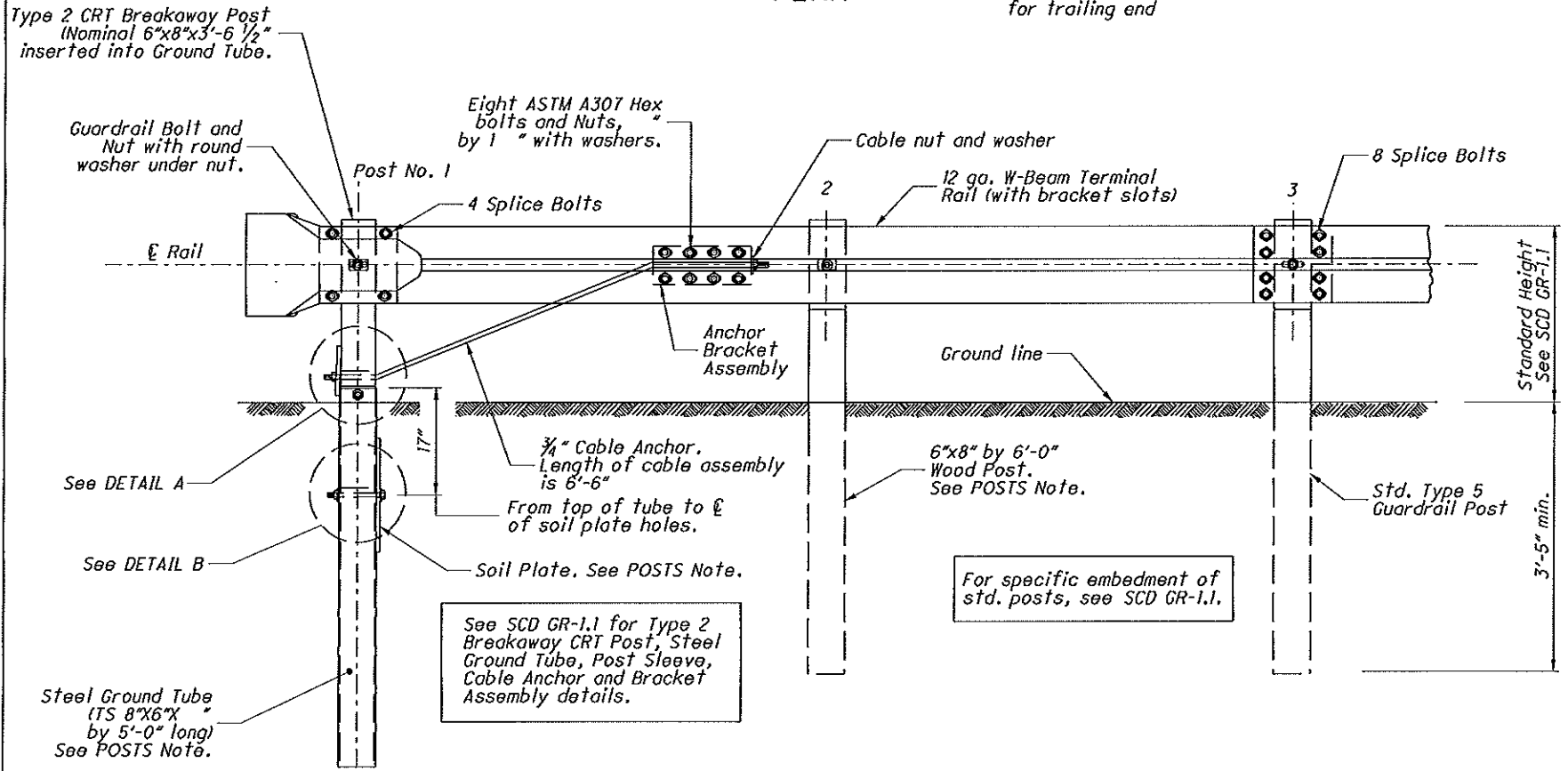
**POSTS:** Post No. 1 may be an 8'-0" long Steel Ground Tube without a Soil Plate in lieu of the 5'-0" tube with Soil Plate.

Post No. 2 can be W6x9 (or W6x8.5) with notched wood blockouts or a standard Type 5 post and blockout. Recycled plastic blockouts are permitted.

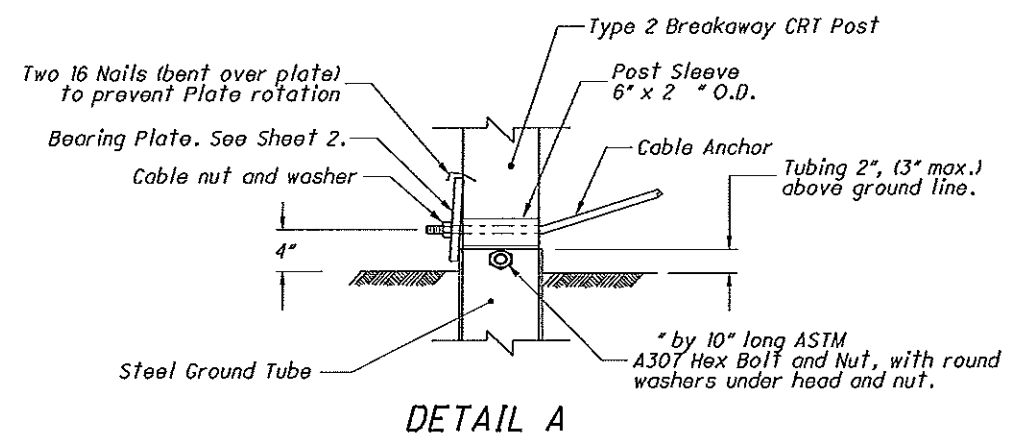
**PAYMENT:** All labor and materials, including the W-Beam Rounded End Section and the W-Beam Terminal Rail for the 12'-6" anchor assembly shall be included in the unit price bid for Item 606 - Anchor Assembly, Type T, Each.



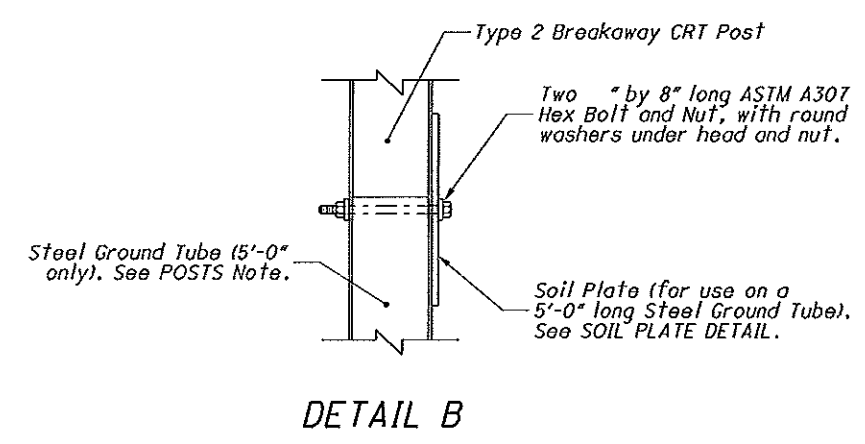
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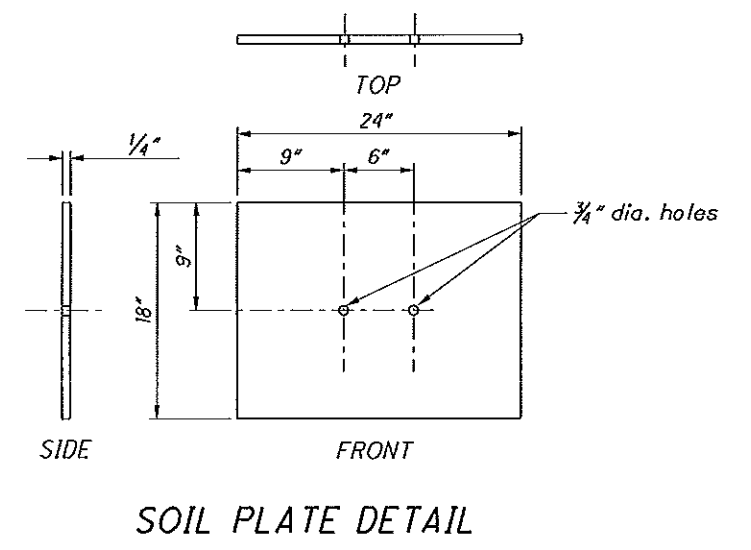
**ELEVATION - FOUNDATION TUBE**



**DETAIL A**

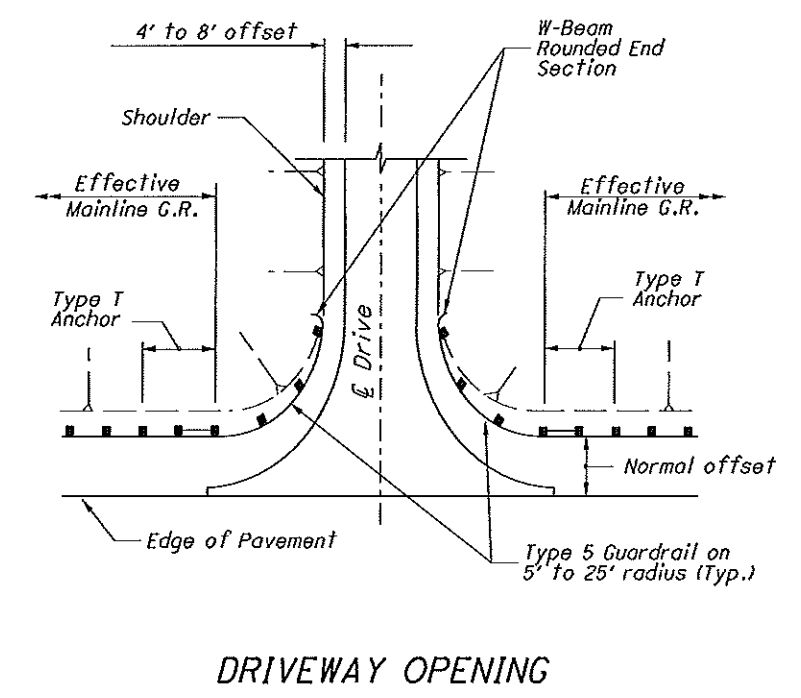
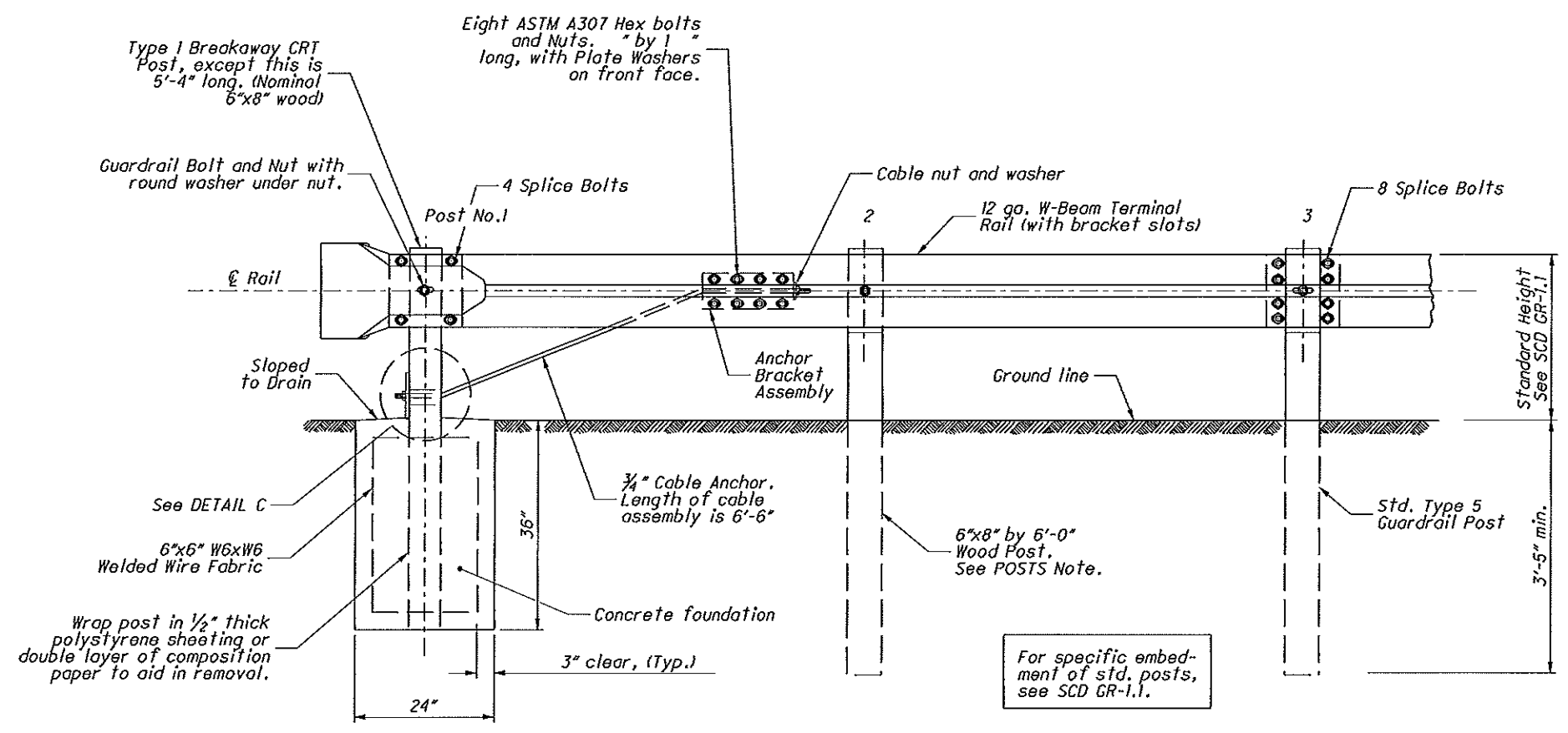
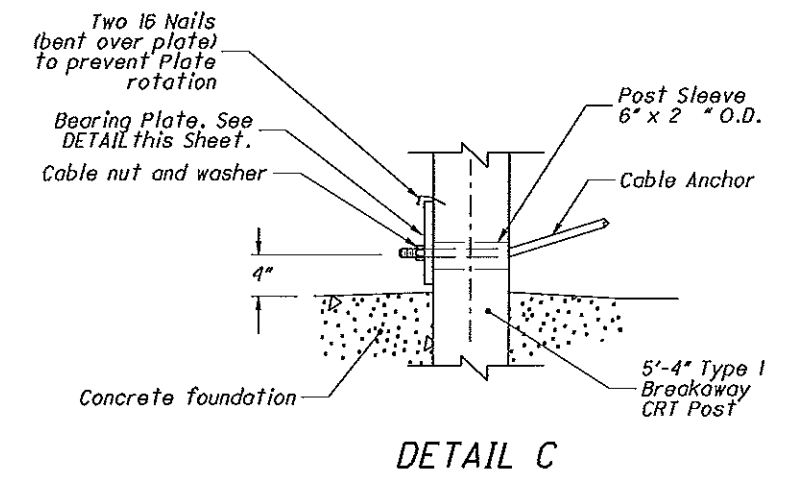
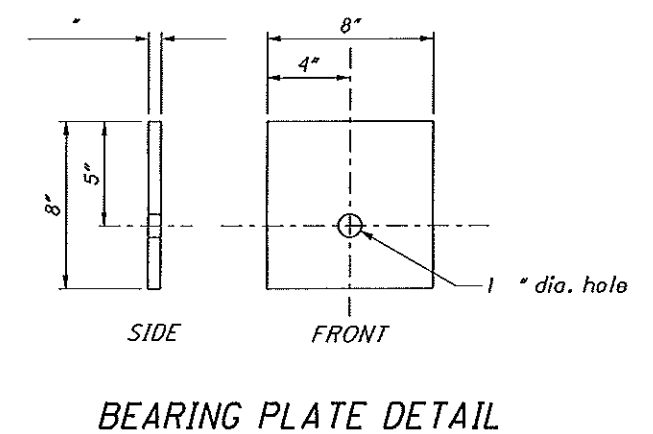
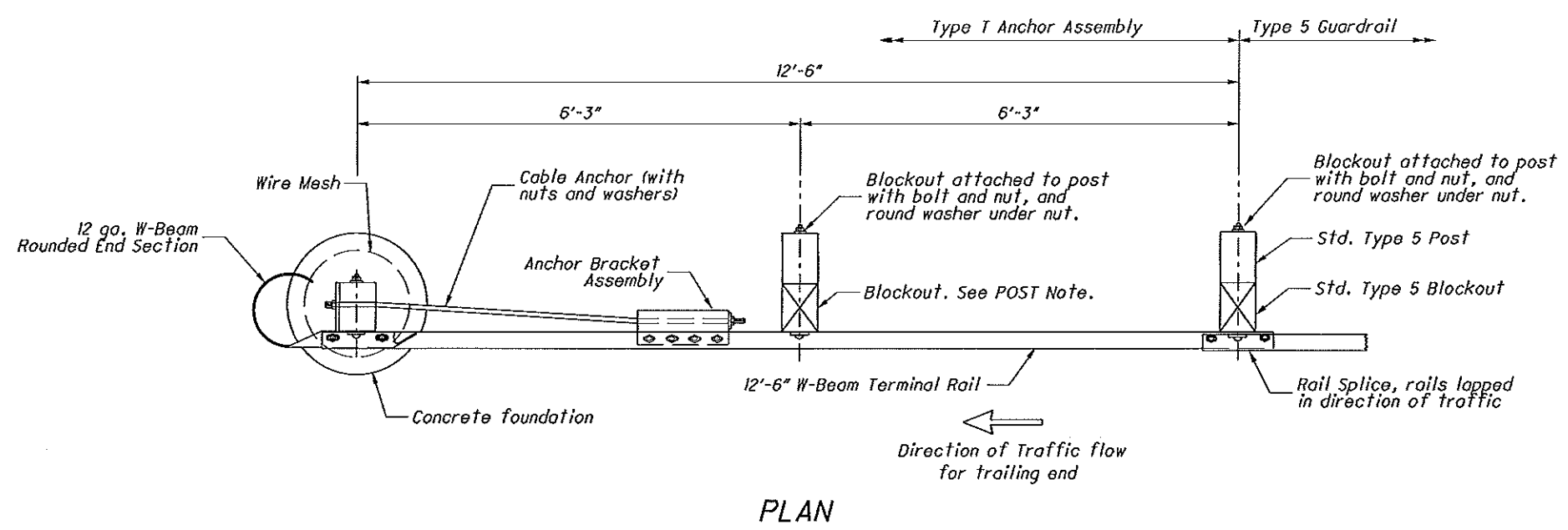


**DETAIL B**



**SOIL PLATE DETAIL**

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DATE: 8/10/2015  
MODELNAME: Sheet



DESIGN FILE: I:\projects\94390\roadway\sheet\FIS\_GR-4.2.dgn  
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 DATE: 8/10/2015